

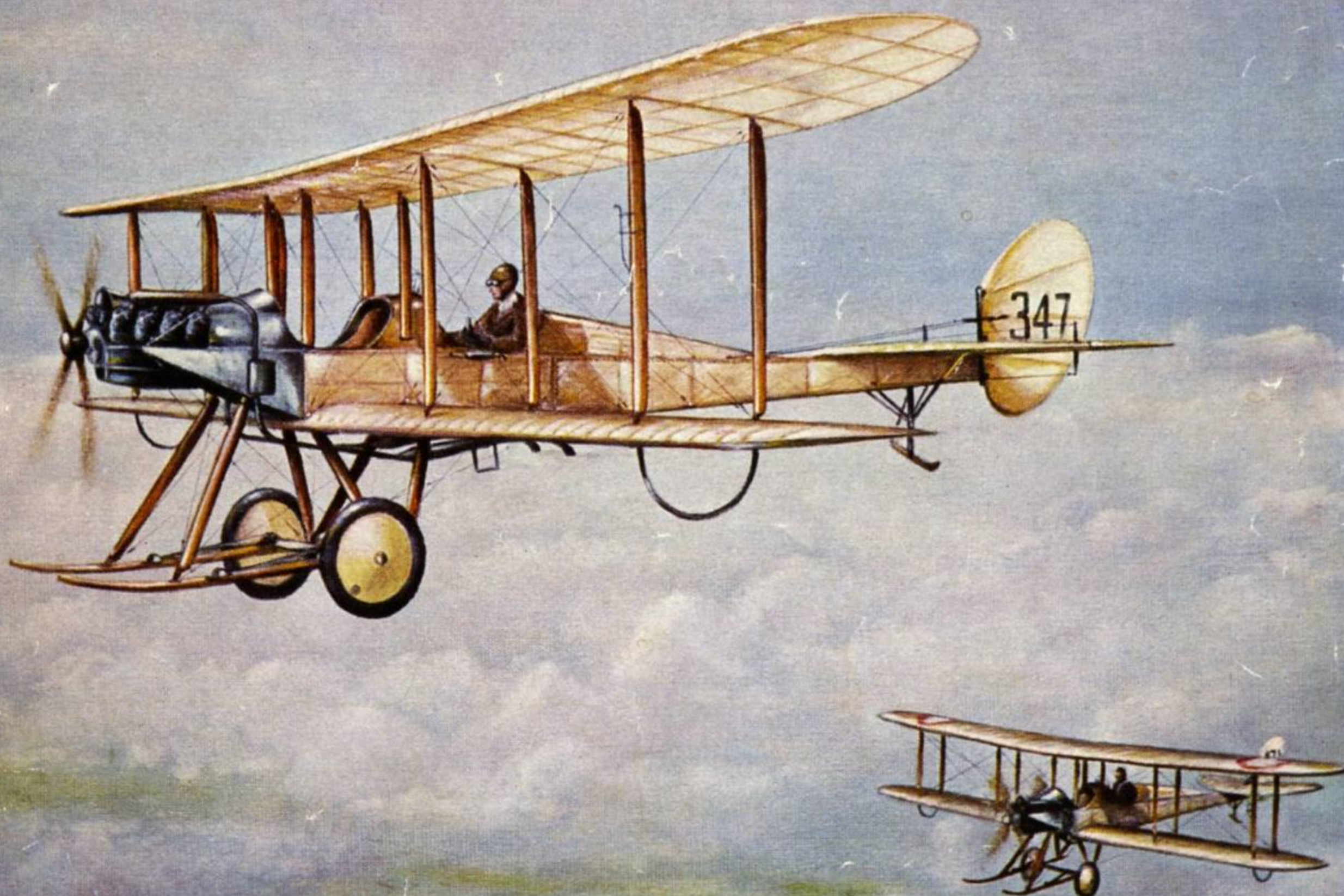
# **AIRFIX** magazine

DECEMBER 1969

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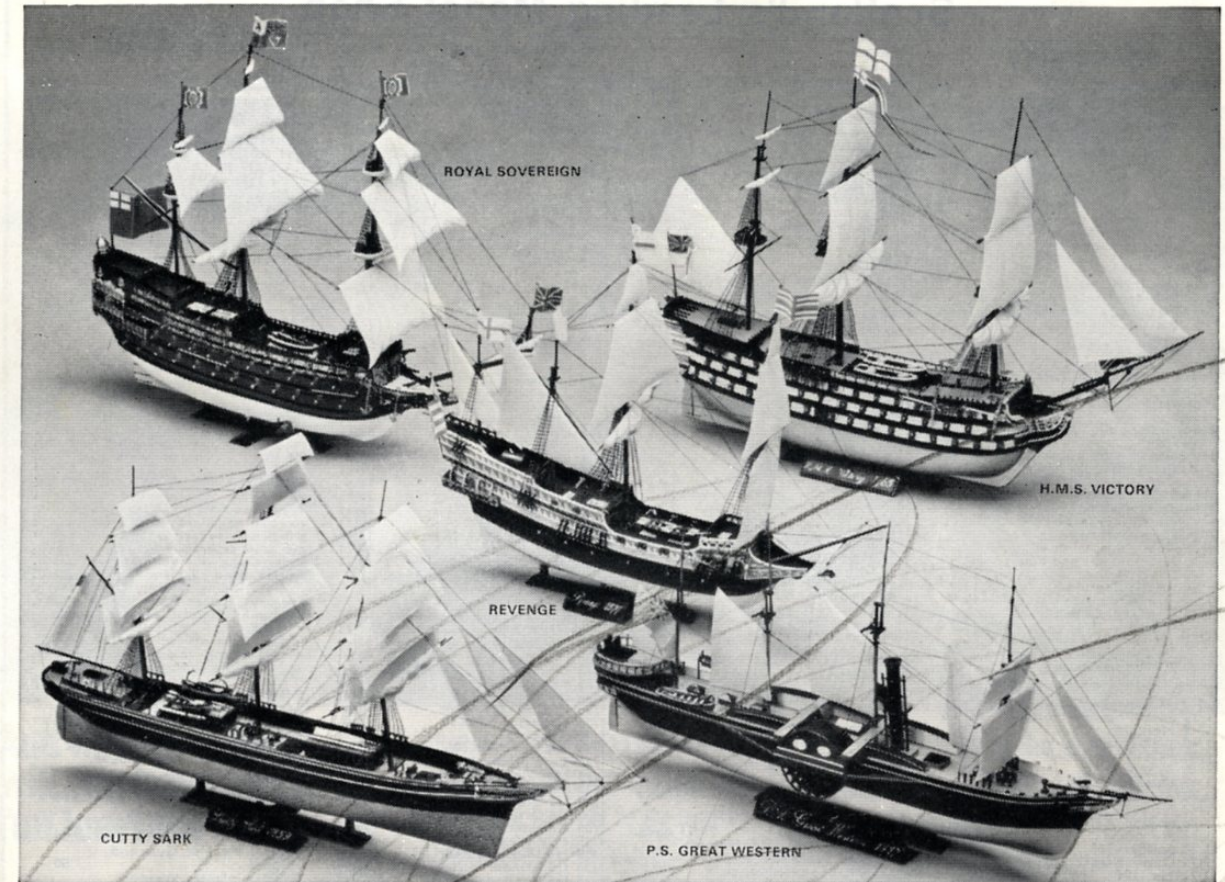
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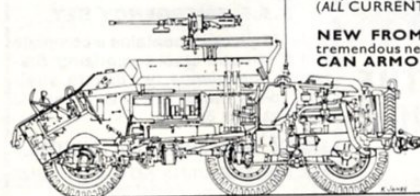
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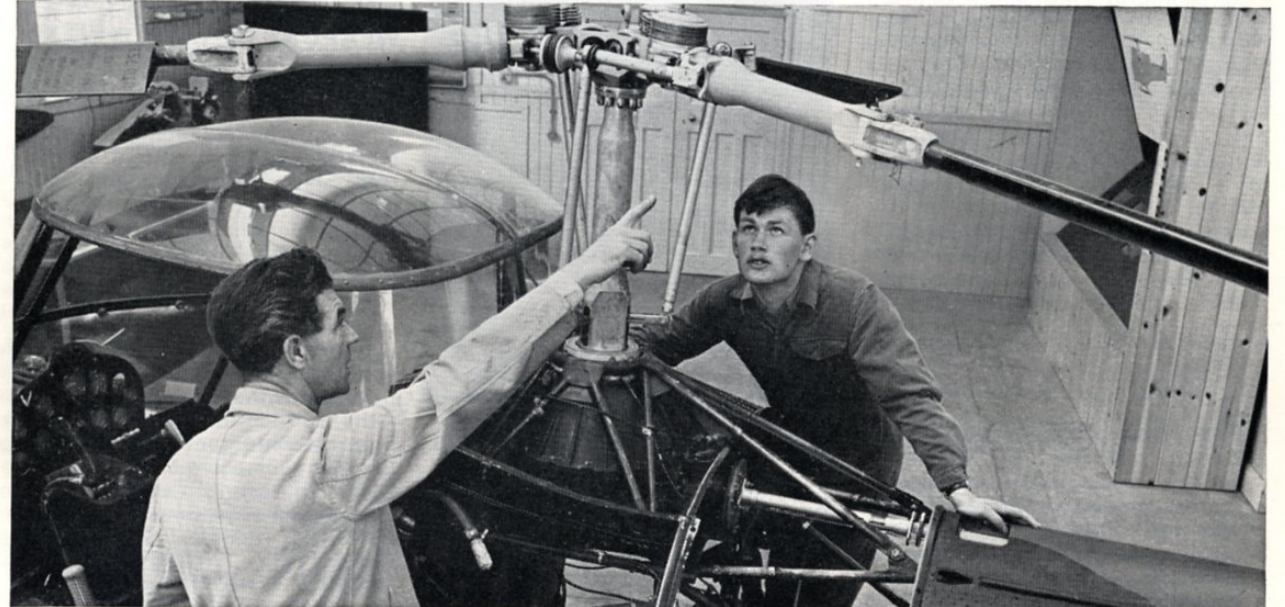
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Under its original title *Die Deutschen Panzer, 1926-45* this famous book by Dr. F. M. von Senger und Etterlin has long been regarded as the standard work on German tanks and armoured vehicles. There have been three editions of the German book, each one expanded and revised. Now—at long last—it is available in English, in a handsome, large new-size edition. The translation is by J. Lucas of the Imperial War Museum, working with Peter Chamberlain and Chris Ellis (who also contributed material about the Tiger tank).

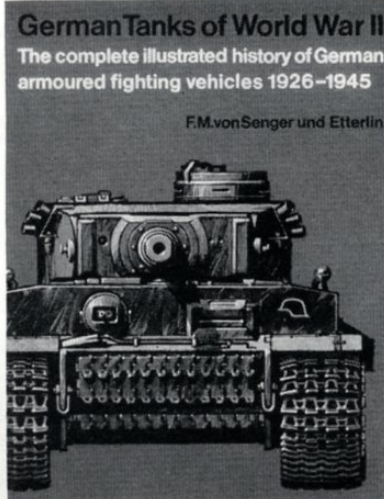
In the book the section on History and Development covers the entire range of armoured fighting vehicles:

**Panzerkampfwagen I-VI, the Czech vehicles in German service, armoured cars, light reconnaissance vehicles, eight wheeled types, personnel carriers, experimental and amphibious vehicles, captured types in the German service.**

There is a complete tabulated inventory of all German armoured fighting vehicle prototypes, production models and variants, keyed to the photographs, drawings and technical data by page number.

The illustration section contains 186 photographs of production models, prototypes, wooden models and variants, and an additional 170 drawings, mostly to a uniform scale of 1:73 showing clear and accurate fore and aft details; and side elevations, as well as plan details on all the major types.

Twenty pages of technical data give all known details of all the types referred to in the text and illustrations, and include information on external dimensions, weight, performance, armour, armament and crew. There is a table of production statistics for the period 1939-44, and a table showing the numerical tank strength of the German Army 1940-42.



### REVIEWERS' COMMENTS

"Lavishly illustrated . . . of great value"—*Daily Telegraph*.

"It can truly claim to be a standard work"—*Yorkshire Post*.

"A joy to own . . . it has all the answers to German armour questions"—*A.F.V. News*.

"The standard and most complete work on German tanks . . . if you have this book you have virtually all you need to know on German AFVs at your fingertips"—*Airfix Magazine*.

*German Tanks of World War II* is unequalled as the authoritative work of reference on this subject. It is also a magnificent book produced in the handsome size of 11¼" x 8¼". 95s. (4/6 p & p)

**RED ARMY UNIFORMS AND INSIGNIA, 1944.** Originally prepared under the direction of the C.I.G.S. for restricted War Office circulation, this 40-page booklet contains over 175 illustrations depicting shoulder-straps, tunics, breeches, greatcoats, headgear, orders, medals, badges, honorary arms and standards. Stiff paper cover. 17/6 (1/- p & p).

**TANKS OF WORLD WAR I: BRITISH AND GERMAN** by Peter Chamberlain and Chris Ellis is comprehensive but concise account of the origin and development of World War I tanks. There are more than 60 pictures and drawings, many rare and hitherto unpublished. Appendices include detailed tables of specifications for all principal types described. 25s. (1/6 p & p).

**GERMAN INFANTRY WEAPONS OF WORLD WAR II** by Lt.-Col. A. J. Barker includes small arms ammunition, pistols, sub-machine guns, rifles, machine guns, anti-tank weapons, grenades, mortars and other certain specialised pieces of equipment. Such famous names as Luger, Walther, Mauser, Bergmann and Schmeisser appear in the pages of this book with detailed descriptions of the weapons which bore them. Fascinating digressions cover the remarkable "Krummerlauf" curved barrel attachment, poison and explosive bullets, and the revolutionary F.G.42—the hybrid automatic rifle-cum-light machine gun-cum-sub-machine gun. There are 55 illustrations. 25s (1/6 p & p).

**BRITISH AND AMERICAN INFANTRY WEAPONS OF WORLD WAR II** also by Lt.-Col. A. J. Barker, covers similar ground (with 61 photographs and drawings) to *GERMAN INFANTRY WEAPONS OF WORLD WAR II*. Amongst the many infantry weapons discussed, Colonel Barker includes such famous items as the Garand (U.S. Rifle. 30 in M.1), described by General George Patton as "the greatest battle implement ever designed", and the sub-machine guns so evocative of Chicago in the Prohibition era. 25s. (1/6 p & p).

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AIRFIX magazine

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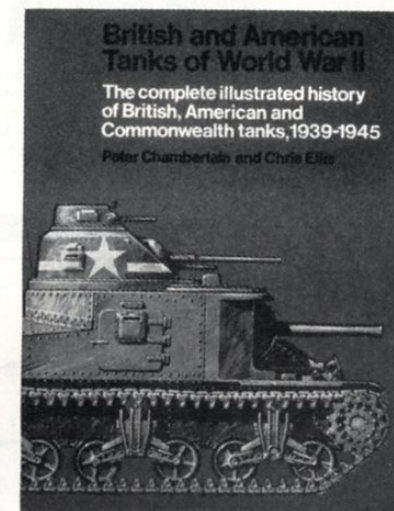
The text gives a clear description of all that is illustrated. It includes many interesting details of the performance, development, handling and methods of construction of all types of ordnance, and explains its application to its various roles, such as Field, Siege, Coast, Mountain and other specialised forms of artillery. Large size of 11½" x 8½". Price only 85s (4/- p & p).

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December, 1969

Completely new—just published

## BRITISH AND AMERICAN TANKS OF WORLD WAR II



**BRITISH AND AMERICAN TANKS OF WORLD WAR II.** The Complete Illustrated History of British and Commonwealth Tanks, Gun Motor Carriages and Special Purpose Vehicles, 1939-1945.

This new book is unique! It is the first comprehensive reference encyclopaedia (by Peter Chamberlain and Chris Ellis) devoted to the history and development of the tanks used by Britain, the United States of America and the Commonwealth during the years 1939-

1945. It gives a detailed history of each type, plus full pictorial and historical coverage of the many variants, sometimes running into dozens, which were produced on each chassis. With a few minor, very insignificant exceptions every tank type produced is fully written up—more than 2,000 vehicles in all! There are 569 photographs, many of them being very rare, and a lot of these have never been published before.

In addition to the text and photographs which describe each vehicle, concise specifications are given. In the appendices will be found pictures, brief histories and specifications of the principal tank guns, engines and suspension systems. There is also an appendix containing scale drawings (1:76) of the principal tank types.

The authors of this superb volume—Peter Chamberlain and Chris Ellis—are well known to AIRFIX magazine readers. Their names alone are recommendation of the excellence of the book. *BRITISH AND AMERICAN TANKS OF WORLD WAR II* is the biggest book on armoured fighting vehicles yet published—it is a 'must' for every modeller and student of AFVs. It is a handsome volume sized 11½" x 8½", and costs 105s (4/6 p & p).

**FRENCH ARMY REGIMENTS AND UNIFORMS** by W. A. Thorburn. This book is authoritative and profusely illustrated, a most valuable guide to one of the most fascinating and complex periods of military costume (1786-1870). The author is Keeper of the Scottish United Services Museum in Edinburgh and his book is illustrated solely from contemporary prints. This authoritative account of the Imperial and Royal Guards, Infantry and Cavalry is the result of many years' study and research. There are 58 black and white illustrations and 2 in colour. 30s (1/6 p & p).

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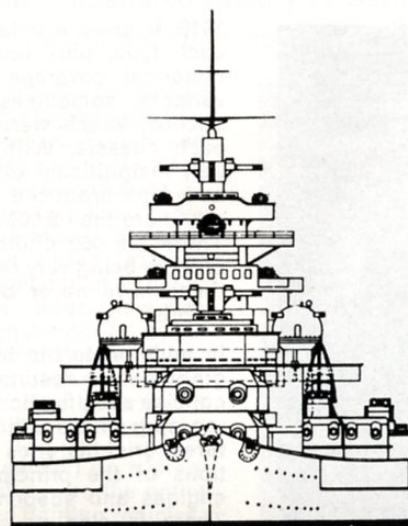
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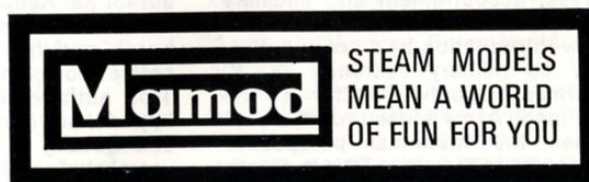
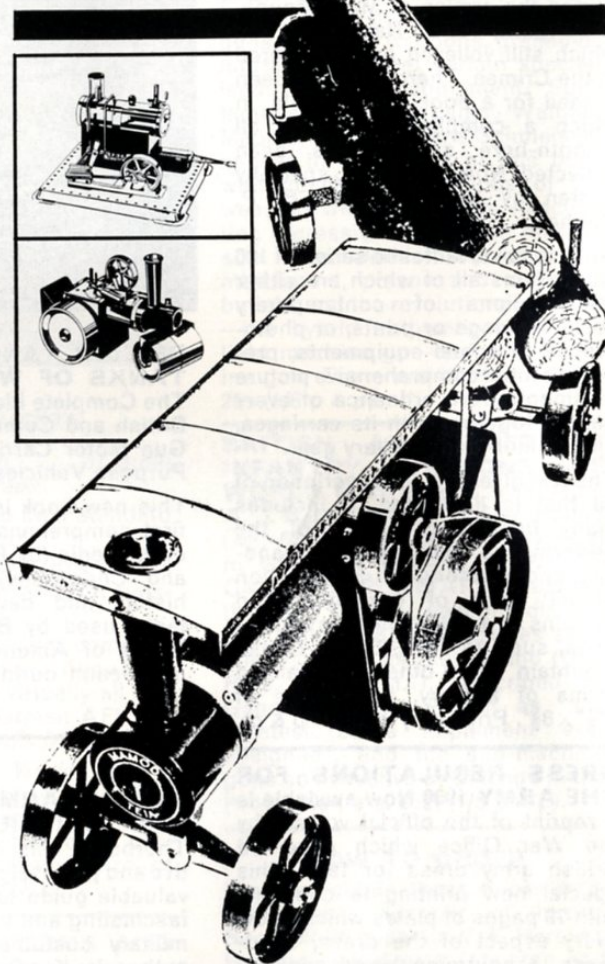
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AIRFIX magazine

# AIRFIX magazine FOR PLASTIC MODELLERS

December 1969

Volume 11 No 4

Editor Chris Ellis

#### Cover Picture

The BE 2a biplane was one of the principal British service aircraft at the outbreak of the first world war and at that time it was used by both Royal Flying Corps and Royal Naval Air Service squadrons. Aircraft No 347 of No 2 Squadron RFC, piloted by Lieutenant Harvey Kelly, was the first British service aeroplane to land in France after the outbreak of war in 1914. This view of No 347 and another aircraft of the squadron on a patrol flight in the early days of the war well portrays the plain doped fabric finish and serial application typical of the period. Part 1 of Bruce Robertson's 'Bombing Colours' series in our April 1969 issue covered the markings of this era in detail. The BE 2a had a speed of about 70 mph and could stay aloft for three hours.

(Photograph by B. Baker from a painting by R. H. Williams)

Next publication date:  
December 27, 1969

#### Editorial Offices:

PSL Publications Ltd  
9 Ely Place  
London, EC1  
Tel: 01-405 2297

#### Advertisement Offices:

Stanbury + Treadway Ltd  
9 Ely Place  
London, EC1  
Tel: 01-405 1721

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#### Circulation Department:

Surridge Dawson & Company (Productions) Ltd  
Publishing Department, 136/142 New Kent Road, London, SE1  
Telephone: 01-703 5480

Airfix magazine is published for the proprietors, Airfix Products Ltd, by PSL Publications Limited, on the fourth Friday of each month. Annual subscription rate 36s (USA \$5.50) from Surridge Dawson & Company (Productions) Ltd. Second Class postage paid at New York Post Office, N.Y.

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# NEWS FROM AIRFIX

The world's greatest value in construction kits

## ● Hawker Siddeley Harrier

## ● Cessna O-2A

## ● M3 Grant/Lee Tank

## ● Sikorsky Sea King

**H**AWKER Siddeley's Harrier—the world's first military jump-jet aircraft—is now released by Airfix as a superbly detailed 1:72 scale kit of the RAF's new vertical take-off combat plane.

Included in the 96 part kit are the fan and mounting for the 19,000 lb thrust Rolls-Royce (Bristol) Siddeley turbofan engine that gives the real Harrier an approximate top speed of 730 mph. The four down-thrust nozzles employed during take-off and landing are accurately modelled and linked to swivel simultaneously on a pivot assembly.

Pilot and ejector seat are provided for the miniature cockpit, and landing gear may be modelled in the lowered position or discarded—when the landing gear doors are cemented shut—and the aircraft mounted on a plinth.

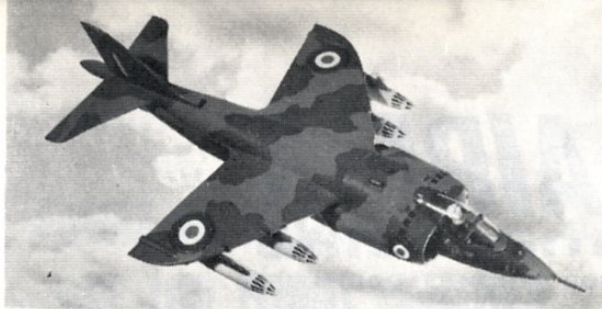
Optional armament, RAF service transfers, and painting instructions are included in the kit, which costs 3s 9d.



The Cessna O-2A is the military version of the Cessna Skymaster. Model is shown in O-2A form.

**C**ESSNA'S unconventional 'push-pull' aircraft, the twin-boom military machine designated the O-2A, is now available as a 1:72 scale Airfix kit.

Powered by two 210 hp Continental engines, one mounted as a 'puller' in the nose of the passenger cabin, and the other as a 'pusher' at the rear, the O-2A is the US Air Force's latest artillery spotter and light air strike machine. A psycho-



The new Airfix Harrier model, shown with full ordnance load.

logical warfare version, the O-2B, is equipped to dispense leaflets and broadcast from the air.

Models of either version of the 200 mph aircraft can be made from the 62 part kit. Accurately detailed miniguns, rockets and flares for wing-pylon mounting equip the model O-2A for air strikes. Substituting a loudspeaker for a door panel and painting over two cabin windows converts it to the propaganda version.

Fully detailed seating for four, an instrument panel, pilot and rear bulkhead make up the cabin equipment included in the kit.

The kit, including painting instructions, serial and service markings for both versions of the Cessna O-2, costs 2s 9d.

**T**WO versions of a tank that helped to shape the course of history during the second world war can be built from the newest plastic construction kit in the Airfix range of armoured vehicles. The United States Army M3 Medium—



the General Lee—was the first Allied tank to be fitted with a 75 mm gun effective enough to combat the German armoured units. It was supplied to the British Army and first saw action in the Western Desert. It boasted a hull-mounted stabilised 75 mm gun as main armament, a 37 mm gun in the turret and a machine gun in a rotatable cupola on top of the turret.

A special version of the tank, fitted with a turret to meet British requirements was known as the General Grant and was the major type in British service initially.

The 68 part Airfix kit makes either the General Lee or General Grant. Moving parts include the traversing turret

*Continued on page 162*

Latest Airfix helicopter model is the Sea King, described on page 162.



# NEW BOOKS REVIEWED FOR MODELLERS

## Allied Tanks

BRITISH AND AMERICAN TANKS OF WORLD WAR 2, by Peter Chamberlain and Chris Ellis. Published by Arms & Armour Press, 16 Pembroke Road, London W11. Price 105s.

**T**HIS is a large and profusely illustrated reference book which provides a very complete coverage of all tanks, special purpose variants, and SP guns used by the British, American, and Commonwealth nations in the years 1939-45. Within each nation entries run chronologically from the earliest to the last, so the British section starts with Light Tank Mk II and ends up with the Centurion, while the American section starts with the M1 Combat Car and ends with the T34 Heavy Tank. The text gives concise but detailed development histories of each type, and all variants on a particular chassis are also described and, in most cases, illustrated. In the case of the more important vehicles coverage runs to many pages. For instance the Sherman gets 23 pages not counting SP variants, though little used types get only a page or less. Basic specifications are given for each type and appendices deal in more detail with types of guns, engines, suspensions, etc. Also included in the appendices are scale side view drawings of principal types, by Kenneth M. Jones. A big index gives cross-reference by function, the text entries being by chassis types. There are nearly 570 illustrations all told, many of them rare and hitherto unpublished. Since this is the first book to cover Allied tanks of the 1939-45 period in such detail it should prove of great interest and value to armour enthusiasts. In fact, some of the vehicles shown will be new to the average reader. We noticed that in three instances in the American section, adjacent pictures became inadvertently transposed during printing. For the record these are the M3A3 and M3A4 medium tanks, the T35 and T35E1 GMCs, and the T40 and T24 GMCs. In all there are 224 large pages and the book provides a good deal of useful material for your money.

## Fighting Planes

COMBAT AIRCRAFT OF THE WORLD, edited and compiled by John W. R. Taylor. Published by Michael Joseph Ltd (and Ebury Press), 26 Bloomsbury Street, London WC1. Price 126s.

**T**HIS immense 650 page work could well be top of your Christmas present list if you're an aviation enthusiast. The name of John W. R. Taylor as Editor guarantees its excellent quality and he has been aided by ten other specialists in compiling histories, pictures, specifications and scale drawings of every fighting aircraft that has ever seen service. Nations are arranged in alphabetical order and a very neat layout has been adopted. Of necessity the data given is very basic and the scale drawings are small, but this is understandable in a book with 2,000 illustrations in all. In fact it's a masterly exercise in squeezing a quart into a pint pot, and very well done it is too. As an easy-to-follow master reference book for the aviation enthusiasts' bookshelf it achieves its object admirably. Excellent value for money.

## Waterloo Uniforms

L'UNIFORME ET LES ARMES DES SOLDATS DU PREMIER EMPIRE, VOL 2, by L. and F. Funcken. Published by Casterman, Paris, and available in Britain from Historex Agents, 3 Castle Street, Dover, Kent. Price 35s plus 4s 6d postage.

**R**EADERS familiar with Volume 1 of this splendid work, which we reviewed last year, will need no tempting to acquire the companion volume. Reiterating the remarks we made about Volume 1, this is a most valuable and comprehensive guide, in colour throughout, to all the uniforms and much of the other military equipment used at the time of the First Empire, the period of the Battle of Waterloo. Not surprisingly, the book is handled in Britain by Historex since it forms virtually a complete colouring and conversion guide for Historex soldier kits. Now that Airfix have intro-

December, 1969

duced a 'Waterloo' range, these two volumes will be equally useful to converters of smaller scale figures. This second volume covers the Garde Imperial plus the Swedish, Austrian, and Russian forces. Volume 1 covered the other French regiments, and British, Prussian and Spanish forces. There are 156 pages with superb colour plates on each alternate page. The text is in French throughout, but is easy enough to follow for anyone who has studied French at school. This is an excellent reference book for model soldier fans interested in the period, and is modestly priced for the vast amount of really useful information it contains. Historex Agents can also supply the earlier Volume 1 at the same price as Volume 2.

## For Wargamers

INTRODUCTION TO BATTLE GAMING, by Terence Wise. Published by Model & Allied Publications Ltd, 13-35 Bridge Street, Hemel Hempstead, Herts. Price 21s.

**F**OR anyone seeking a concise and inexpensive book giving all the vital facts—and plenty of good ideas—for wargames, this well-produced little volume does the job exceedingly well. It includes simple and workable rules evolved by the author (and not necessarily the same as any others) which are easy enough to pick up, particularly if you set up some figures and equipment and follow the sample games stage by stage to start with. There are many handy tips for easy scenic items necessary for table top fighting and much else of value, all written in a very readable style. Excellent for beginners.

## British Uniforms

DRESS REGULATIONS FOR THE ARMY, 1900. Facsimile reprint. Published by David & Charles Ltd, South Devon House, Newton Abbot, Devon. Price 63s.

**T**HE 'Bible' on the way the British Army dresses is the 'Dress Regulations' which is the ultimate authority for any given period. Latest in the David & Charles Reprint series is the 1900 edition which will delight model soldier collectors and uniform enthusiasts since it contains every detail, literally to the last button, for every regiment and unit existing at that time, though it should be made clear that this book covers officers' dress only. This takes 126 big pages with another 79 pages of illustrations. In many ways the reproduction is better than the very rare original—which relatively few would ever get the chance to acquire in any case—and present-day enthusiasts are lucky that modern printing processes enable them to buy such an interesting 'collectors' piece' at a relatively modest price for a book of this large size. In short a very valuable reference book.

## More on the Battle

THE NARROW MARGIN, by Derek Wood and Derek Dempster. Published by Arrow Books. Price 25s.

BATTLE OF BRITAIN, by Basil Collier. Published by Jackdaw. Price 12s.

**T**HERE can be no question of it, *The Narrow Margin* remains the most authoritative work yet to appear on the subject of the Battle of Britain and in its new large paper back edition an excellent book has been produced. It is one that should grace every bookcase. It tells the story of the years leading to the Battle as well as any. Now that it is so excellently illustrated by many photographs hitherto unpublished the whole story comes vividly to life. It is a very readable book despite the inclusion of much detail. The compilation of such books is always difficult and retaining the detail and holding the reader's attention—as this book does—is no easy task.

This is not just the re-issue of an already published book, for the authors have added more material. At 25s it is fine value.

A highly successful venture in recent years has been the Jackdaw series. In a large strong envelope are gathered together a series of charts, letters, details on historical events and one of the series deals with the Battle. Its compiler is Basil Collier who wrote the Official History of the Second World War entitled *The Defence of the United Kingdom*. He therefore writes as a highly professional historian whose masterly Official history remains a supreme example of how history should be written. In his Jackdaw he includes combat reports, a facsimile of the front page of the *Daily Express* for September 16, 1940, claiming 175 enemy aircraft destroyed on the previous day (the BBC thrilled us with 185!), the official survey of the fighting on 15th, Dowding's letter of 16th May, a German letter concerning the establishment of security police in England, an appeal

*Continued on page 195*





**A**UTAIR, at the present time one of Britain's leading independent airlines, has had a rapid growth since 1960 when the company bought its first DC-3 and started commercial operations.

Originally founded in 1952, Autair Ltd started work as a purely helicopter organisation and, although the airline is entirely separate from the rotary winged company today, it was not until 1963 that it became Autair International Airways to form a firm foundation for the modern fleet of aircraft at present in service.

After the purchase of the DC-3, several ex-BEA Vikings supplemented the air charter operations of the new company.



Before being bought out by the publicly-owned Court Line shipping company three years later, Autair, now well established in the inclusive tour and air charter world, had added Ambassadors G-ALZS, 'ZV and 'ZZ to the fleet.

The introduction of scheduled services was a natural development for the company after the purchase of two HS 748s, G-ATMI and 'TMJ and three ex-BEA Heralds, G-APWB, 'C, 'D. The first service started in October 1963 from Luton to Blackpool and was followed by other routes to the major development areas in the UK around Tees-side, Hull, Carlisle, Dundee and Glasgow. Other services operated from several of the northern terminals to the Channel Islands during the summer months. The first overseas scheduled routes joined Hull and Tees-side with Amsterdam (Schipol).

Autair did not imagine that a large profit would be made on these services at first. They sought financial assistance from the Government and local authorities, and in the case of Dundee, Tees-side and Carlisle a contribution was made. The Government, however, did not offer the financial aid at first suggested and at the same time backed British Railways in providing links with London. Although the help from the development areas themselves was useful, it did not cover the considerable loss that Autair soon found they were suffering. The Edwards Committee recommendations on the future of civil aviation insofar as it affected domestic services has still not been fully accepted by the Government and as a result Autair were forced to tell Whitehall that they were in no position to continue the subsidy indefinitely. With an

annual loss of £150,000 on these routes Autair therefore cancelled the services on October 31, after giving three months' notice, and the fleet of Heralds were put up for sale.

Meanwhile, the inclusive tour operations had increased enormously. Pure jet aircraft were added to the Autair fleet to cover the need for fast modern aircraft which could take the holidaymaker to any one of a dozen points in Europe, from Norway to North Africa, in the minimum of time but with the maximum of comfort.

#### All-jet fleet

The choice of the BAC-111 as the standard aircraft for Autair was a wise one. The 748s are being kept on for a while and these are at present on lease to other airlines. By 1970, Autair will have standardised on the BAC-111 Series 500 but one of the present fleet of 400 Series aircraft will be retained by the company. This will be G-AWBL. The others, 'VOE, 'OF, 'GP and 'WXJ, are due for disposal when the complete 500 Series fleet of seven aircraft have been delivered by April 1970. The latter will be registered G-AXMF-'MN.

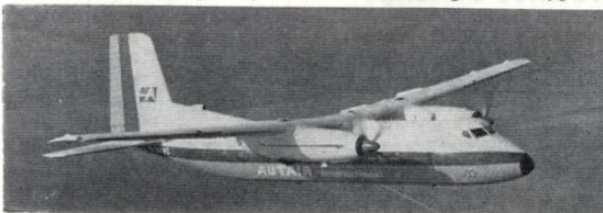
There will be other major changes too. The name of Autair will be dropped entirely and COURT LINE Aviation Ltd will take its place on January 1, linking the airline with its parent company. In 1970 the new company expects to turn over approximately £6 million as opposed to £3 million in 1968. In that year the airline made a net profit of £217,000.

#### New colours

In a similar manner to Braniff, the new aircraft will be painted in either one of three colours. These will be pastel shades of either pink, turquoise or orange. Stewardesses will wear gay informal pinafore dresses in colours to match the exterior of the aircraft and the interior decor will also echo the bright new colours.

The complete restyling of the airline has been the responsibility of Mr Peter Murdoch and his wife who were also the graphic designers for the Mexico Olympics.

Mr E. J. Posey, managing director of Autair and now of Court Line, said recently, 'Flights should be fun, especially when all your passengers are holidaymakers.' Just to add to the new ideas, Court Line will be introducing a 'feed when you please' system of catering. Instead of serving meals in flight in the usual hurried manner of medium haul European airlines, because of the much shorter time lapse between take-off and landing, they will be introducing a new type of



Now awaiting sale because of the cancellation of internal scheduled services operated by Autair is this Herald G-APWC, one of three ex-BEA aircraft used by the company.

AIRFIX magazine

cabin seating which has the meal already available in the seat back.

The food is prepared before take-off and meals are varied according to flight times. Passengers will be able to eat just as soon or as late as they wish—not just when someone else can hastily serve them. This innovation will give cabin staff more time to deal with passengers' queries and look after them more effectively for the whole of the flight.

#### Maximum utilisation

The BAC-111 is ideal for the inclusive tour airline as it is completely independent of most ground services and has its own auxiliary power unit in the tail which provides power for engine starting and also works the cabin air conditioning plant even when the aircraft is on the ground. Self-contained air stairs drop down from the forward part of the fuselage and at the rear between the twin jets.

The aircraft can be turned round at any airport within the hour at the very most and to give an example of how Autair have used their One-Elevens during 1969, one has only to look at the statistics. The company holds the world utilisation record for the aircraft as in August one of the present fleet of Series 400 One-Elevens flew 402 hours 36 minutes, which meant about 13 hours airborne each day.

Needless to say, safety and maintenance requirements were not relaxed to achieve this figure. The aircraft itself is such a good workhorse that there are few snags after any number of flights, and anything that does need doing is put right by the ground crew whilst the rest of the aircraft is being prepared for another batch of holidaymakers. The only hold-up, as I experienced at Luton, when I visited Autair last month, can be weather but even here the new 500 series aircraft will have blind landing facilities built into the electronics so that when this becomes operational for all classes of aircraft the weather minima can be lowered. Recently the company spent £30,000 in order to hire other aircraft to clear the backlog of passengers that were held up at Luton and at overseas destinations waiting for fog to clear. They are naturally very interested in seeing blind landing cleared for general airline use as soon as possible.

#### Flying the One-Eleven

I recently spent a day with Autair, visiting their Luton facilities and going on one of the many daily flights to a European holiday resort. Gone are the days when the holiday traffic was concentrated into a few weeks during the height of the summer—the present day travel agents are encouraging year round holidays at places in southern Spain, North Africa and the Canary Islands.

Autair have a five-year trading agreement with Clarksons Holidays and the new colour scheme will echo this connection by having Clarkson's symbol on the tail of the aircraft. Surprisingly, I found that there was no financial tie-up between the two companies—both work independently and any arrangements they may have are purely commercial.



Line-up at Luton. Four of Autair's BAC-111s at the Luton maintenance base.

December, 1969

**Right:** Despite the fast turn round between flights there is no relaxing of maintenance standards. Here Captain Mike Williams makes pre-flight checks, which even include the drinking water inlet cover. **Below:** Aircraft Golf Papa (G-AVGP) was the machine in which the author flew.



Other leading tour operators who have agreements with Autair are Midland Air Tour Operators, World Wide Air Holidays, Pontin, Wallace Arnold and Jetway to name just a few.

Part of my day was spent in Autair's apron-side Movement Control building, the hub of the operational side of the airline. It was here that aircrew were briefed and the maintenance side of the operations was co-ordinated. I saw how hard ground staff can work trying to re-allocate aircraft as soon as they came in to one of the airport stands to clear the backlog of passengers waiting in the new terminal building because of fog. It was an uphill struggle but everyone helped out and aircraft were turned round in the minimum of time.

My own flight was due to go to Malaga in southern Spain and I was introduced to Captain Mike Williams and his First Officer, John Moody, when they arrived for briefing. After checking the weather, route, passenger details and other necessary information such as the aircraft's papers, they joined up with Stewardesses McLaskie and Elwood who had previously been checking the cabin equipment and catering.

Our aircraft was BAC-111 G-AVGP and before entering the flight deck Captain Williams did a thorough check of the external parts of the aircraft before checking the fuel load and running through the pre-flight cockpit checks. Everything is done to a strict pattern to ensure the safety of both passengers, aircraft, and crew. When all was ready the powerful towing vehicle operated by Autair ground crew pushed the One-Eleven out of the stand and the engines

Continued on next page



## In the Air—continued

were started before clearance to taxi, after one of Britannia Airways' Boeing 737s, was given by Air Traffic.

Take-off was smooth and almost silent from my point of view, sitting in the jump seat behind the pilot. We climbed south over Brookmans Park, across London at 4,000 feet and then on over Epsom, Dunsfold and Midhurst to clear the London area and the FIR boundary in mid-Channel. The French Airways controllers cleared us up to 33,000 ft over the Nantes reporting point and within the hour Golf Papa was over the Bay of Biscay working on the Bilbao beacon. From Bilbao the Spanish controllers sent us on a dog-leg route to avoid overflying the Madrid Control zone. We went by way of Upper Red 291 Airway to Pamplona, south to Barahona, then Castejon and finally to Bailen about 80 miles from Malaga to start the descent. Great puffy clouds of cumulus made the approach a bumpy one and the Met forecast for Malaga was rain . . . so much for a sunny holiday in southern Spain!

Malaga airport lies close to the sea with the main runway pointing directly eastwards, making the approach a difficult one because of the close proximity of the mountains which seem to surround it on all three sides. Added to the problems was a strong cross wind element which made the landing a tricky one. The airport and buildings were obviously very new, showing how much the tourist trade had developed in this area over the last few years. Apart from a few of the Spanish Air Force Casa 211s, which still showed their associations with the *Battle of Britain* film, the concrete in front of the terminal was crowded with light executive aircraft of several nationalities and at least a dozen airliners ranging from a DC-8 Super-61 of Iberia, another from Capitol Airlines, an Air France Caravelle and a Caledonian Boeing 707.

The turn round of Golf Papa was as rapid as it had been at Luton. The handling agent came aboard to enquire the fuel load needed and cleaners went to work in the passenger cabin so that the aircraft could look spick and span for its return flight. In just under the hour the passengers were on board and Captain Williams was starting the engines ready for the return trip.

Our return to Luton was made through the almost inevitable English overcast with about five mile forward visibility in showers. Luton radar directed us from Brookmans Park where we left controlled airspace for the descent over the



**Top:** Not normally on the fleet list of Autair, but operated by them for carrying spares to aircraft at other airports and transporting crews to off-base destinations, is this Gardan Horizon G-ASJY. The Autair symbol can be seen on the fin. Autair also operate Jet Ranger G-AXMM for executive operations. **Above:** Passengers boarding one of Autair's BAC-111s by way of the rear air-stairs which drop down from the fuselage under the two rear-mounted Spey jets.

Heading picture, page 160, shows the new Court Line colour scheme will consist of fuselages in one of three pastel colours and white wings. Engines and leading edges of both wings and tailplane will be in polished metal. The fleet will be all BAC-111s, seven of which will be 500 Series, and one 400.

familiar M1 landmark. The total return journey time was just six and a half hours and the ground speed well over 400 mph. As we left the One-Eleven the ground crew came to rectify a minor fault on one of the VHF communications radios and as I drove out of the airport 40 minutes later the aircraft was taxiing out once again for another trip. No wonder that Autair estimate that with their new image and the dependable BAC-111 they will carry close on one million passengers in 1970.

## News from Airfix—from page 158

and all guns, which can be elevated or depressed. A wealth of fine detail from rivet heads to toolboxes, engine louvres, and towing hawser is moulded into the body and turret panels. Flexible tracks are also included. The kit costs 2s 9d.

**A**N exciting model of the Sikorsky Sea King amphibious helicopter with whirling rotors and workable sonar unit winding gear can be made from the new Airfix 1:72 scale plastic construction kit.

Sea Kings have flown with the US Navy since 1961, first as submarine hunter-killers and later as minesweepers, air-sea rescue and transport aircraft. This 160 mph helicopter plays a support role in the American space programme, and British-built versions now fly with the Royal Navy.

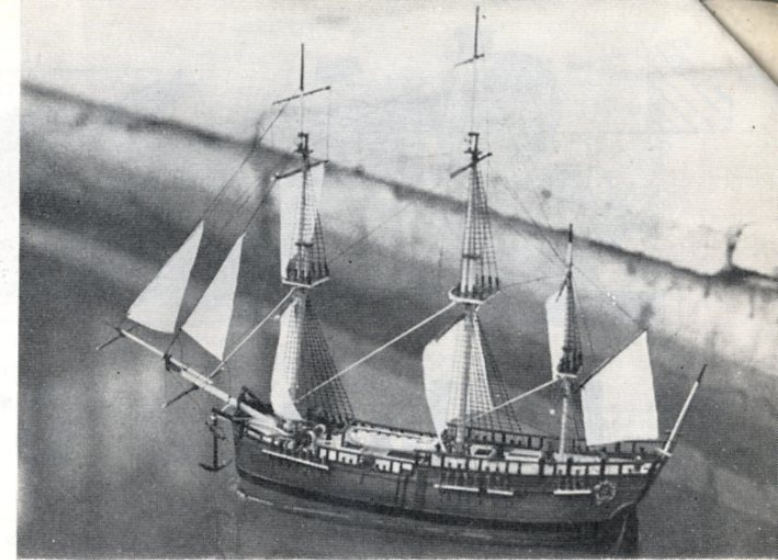
The kit of 107 parts makes a model 9½ inches long with the five blades of the 62 feet diameter main rotor scaled down to just over five inches each. Connected with this rotor is the winding drum to which a miniature sonar detection unit is attached by thread. Spinning the rotor lowers the unit to an operating position, suspended beneath the aircraft, and reversing the motion retracts it into a special housing in the hull. Floats, into which the wheeled landing gear retracts, and weapon racks for the large depth charges and homing torpedoes provided are external appendages that add character to the model.

The accurately scaled crew of two is provided with seats and a cut-out instrument panel. No less than 47 red, blue, yellow and black transfers, from large aircraft serials to minute warning signs, are supplied to adorn the completed model. The kit is priced at 5s 6d.

AIRFIX magazine

# SAILING THE 'ENDEAVOUR'

Popular Airfix kit made to float and sail, by Bert Lamkin



**W**HENEVER I assemble a plastic ship kit, I have the urge to see it afloat, even when it is intended to be a static model. No doubt this urge is shared by quite a number of enthusiasts. A previous article (not by me) showed how the *Cutty Sark* could be made to sail so I decided to give similar treatment to the Airfix *Endeavour*. This ship is a good one to start with because of its simple and straightforward design as sailing ships go.

A start is made by assembling the hull, parts 3, 4 and 5. Extra cement was run along inside the joints to ensure watertightness, and elastic bands were used to hold the parts together while setting.

In the meantime the deck, part 1, is cut in two at the step just aft of the large hatch. The cut is made in the vertical face so as not to shorten the deck, it is less conspicuous that way, too. The deck was then painted a light buff colour, to depict the natural wood colour. While the paints and brush are handy other details can be coloured; it's easier at this stage.

Returning to the hull, the rudder is removed by sawing along the line of the moulded hinge, stopping short by about ½ inch where it meets the hull. This is dealt with later. The hull is now floated and ballasted. I used lead strip, actually old wheel balance weights; approximately ½ lb is needed. The ballast is positioned by 'trial and error' to give an even keel and fixed with Evostick. You can, of course, use any sort of lead, but it is most convenient in strip form. When the ballasting is completed the water line should come to the lower edge of the wale.

With the ballast fixed and not liable to move, the deck was fitted, the forward section first. I found it easier to run the cement along inside the hull on the deck line. The curve of the hull and the location pips will hold it in position. To ensure a good join all round, Humbrol liquid cement was applied with a brush; this runs down into any crack between deck and hull.

The next stage is to fit the rudder. This

was achieved by firstly cementing a short length of wire or thin rod into a groove filed in the cut edge. This pivot post projects about ¼ inch below and 1½ inch above the rudder. A clearance hole is drilled upwards through the hull as near as possible to the original hinge line; actually it will pierce the deck just in front of the moulded location. Another small hole is drilled in the stern post at keel level to take a small cotter pin or paper staple bent to the shape of a loop. The rudder will pivot between this and the hole drilled through the hull.

The tiller, part 39, is drilled for a tight fit and with a small washer is pushed on to the rudder post, the washer acts as a bearing. Leave a small amount of vertical play and then cement the tiller in line with the rudder. The drawing shows the complete arrangement. I suggest that you use the stand from the kit as a 'dry dock' while drilling and cutting, an elastic band keeping hull and stand together. It is cut adrift later.

Now proceed with deck fittings as per the kit instructions and assemble the masts and bowsprit but not the yards and gaff; these will be mounted later. The ratlines and standing rigging can also be fitted. If you want to add extra detail as described in the recent 'Sailplan' series, there is nothing to stop you, but remember that a lot of detail applicable to a static model must be sacrificed on one that sails, especially in a small scale.

Bert Lamkin's model is shown under sail in the two views on this page (Photos by E. Selwyn-Smith).



Which brings us to the sails. I used white plastic from a bag containing greaseproof paper, but silk or a similar very thin material will do. A complete suit will include topgallants, topsails and mainsail for the foremast and mainmast. Topsail and gaff for the mizzen and two staysails on the bowsprit. The moulded sails in the kit will give an idea of size and shape required. In my own case the depth or height was reduced slightly to clear the running rigging.

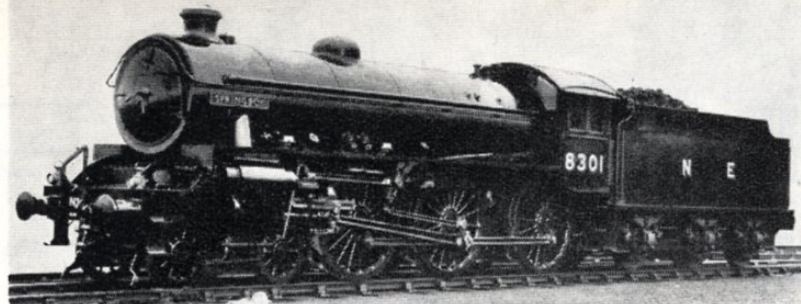
Remove the moulded locations on the yards, then cement the top edge of each sail to the appropriate yard. They can be laced, however, if you're dexterous with a needle. If cemented, a tie of thread through the corners helps to secure each sail. A length of thread is glued along the bottom edge leaving a tail of 3 to 4 inches each side. The staysails have thread on the leading edge as well, this being long enough to make off at masthead and bowsprit. Tie through the lower corners as at the yards for extra strength.

Now tie a short length of thread round the middle of the yards as a 'parral band', leaving two ends which, when tied round the mast, position the yard and allow it to swing. Then add stays from the yard ends to keep them horizontal. With the yards in position, the braces can be attached; these are lengths of thread tied at the yardarm end and taken round the mast to the rear and back to the opposite end of the yard—thus the braces on the foremast yards are taken round the mainmast. Each brace will slew the sail to port or starboard according to the tack the ship is on.

The thread tails on the topgallants and topsails are tied in a small loop to slip over the tip of the yard immediately below, allowing some slack for the sail to 'belly'. The loops also enable the sail to be clewed up when necessary. The tails on the mainsails are also made off in loops to slip over the bollards at the rails. This very simple rigging allows the squaresails to be adjusted as on the origi-

Continued on page 179





Simplest livery for a B1 is all black, as portrayed on the first of the class, Springbok, in 1947.

# Building a 'B1'

CONVERSION FROM THE AIRFIX 'SCHOOLS'

THE idea of this conversion came about rather as an afterthought. First thoughts about possible Airfix 'Schools' kit conversions led to the LNER D49 class 4-4-0. I have always been struck by the similarity between these two classes of locomotives and a preliminary study of some D49 drawings convinced me of the possibility. I hope to return to this subject shortly, possibly in the February issue.

Meanwhile, thoughts of the D49 Class led to thinking about other LNER locomotives and the similarity between the boiler of the B1 4-6-0 and the SR 'Schools' became apparent. It must be admitted that round-top fireboxes and parallel boilers are about the only things the two classes have in common. However, the usefulness of a mixed traffic 4-6-0 to create a balanced LNER locomotive stud after the recent surfeit of *Flying Scotsman* models was a factor which persuaded me to overcome all obstacles and although the outcome is not perfect it is at least a step in this direction.

Before starting work it is recommended that a suitable drawing and photograph of the prototype should be studied. The Roche drawing in Ian Allan's *Historic Locomotive Drawings in 4 mm Scale* shows a wealth of detail. It was decided to make this a motorised model using a proprietary locomotive chassis, and the Tri-ang/Hornby *Britannia* chassis was selected and obtained from Jones Bros of Chiswick who sell this (see review on page 188) as a separate item. I hasten to add that the *Britannia* is not entirely suitable mainly due to the disparity in the coupled wheel wheelbase, but on the credit side the cylinders and valve gear are similar and the coupled wheels are the correct diameter. However, this compromise must be accepted unless you are clever enough to make your own chassis from scratch

—and not many readers will be skilled enough to do that.

It is preferable to complete the work on the chassis first since this is the part on which everything else hangs and has to be tailored to fit. Fig 1 shows an outline drawing of the Tri-ang/Hornby *Britannia* chassis with details of where the relatively few amendments have to be made. To avoid damage it is essential to strip the chassis of all working parts excepting the centre flangeless driving wheels and axle which can be left in place. Stripping the chassis is a relatively simple job which need not be feared provided a careful note is made of the position of the parts so that they are put back in the correct order. The leading and trailing coupled wheels can be removed by tapping out the axles from the non-insulated wheels. Note that these should be replaced on the right-hand side when viewing the chassis from the front. When it comes to replacing them it is simple to do this by squeezing the wheels in a vice at the same time making sure the quartering is right.

It may well be possible to use the smoke unit from the chassis in this conversion but for ease of construction and for strength with the finished B1 body I chose to remove the smoke

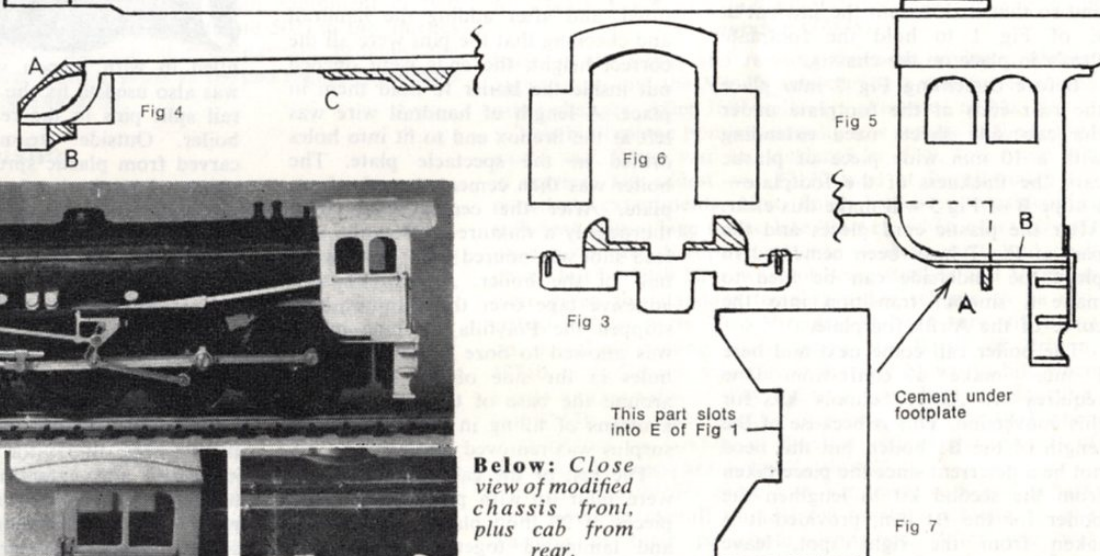
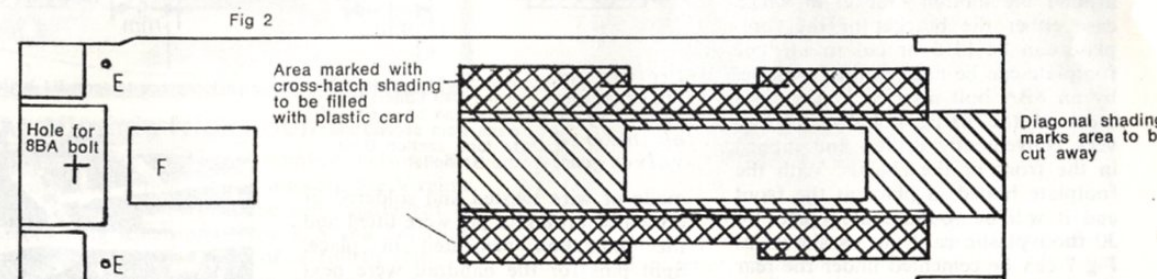
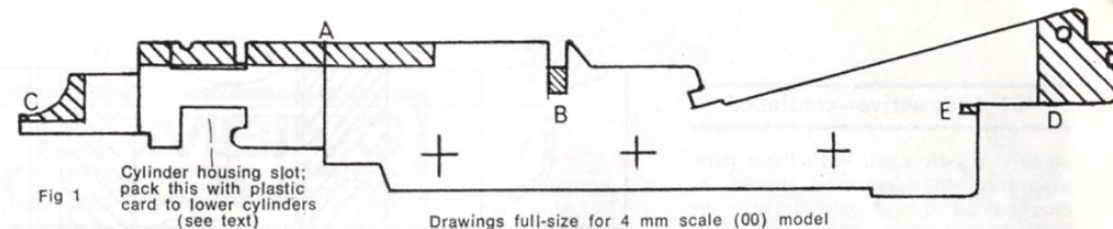
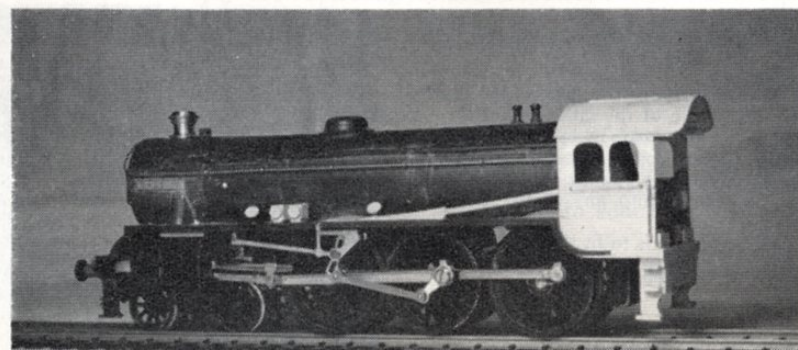


BY NORMAN SIMMONS

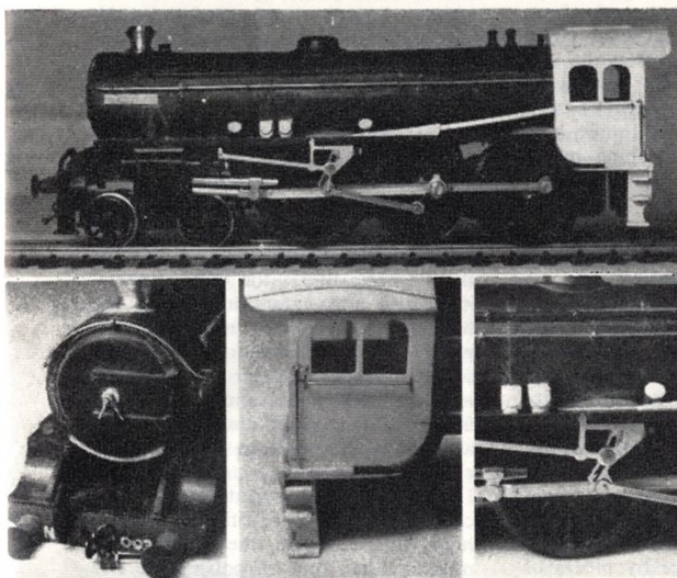
unit. This enabled me to retain a solid footplate at the forward half of the body which could be made to rest on the top of the chassis. To achieve this, the top of the chassis was filed away by a depth of 3 mm as shown at A of Fig 1. The slot B must also be deepened by 3 mm to lower the motion bracket and the top of the bracket must be cut away as at Fig 3. The front end must be filed as shown at C of Fig 1 and a section of the rear end as shown at D must be sawn off. Lastly, a slot approximately 2 mm deep must be cut by a hacksaw as shown at E. This slot becomes the rear fixing point for the B1 body. This completes the butchery on the chassis frame but before the chassis can be reassembled attention must be given to the cylinders.

It will be noted that they are given a slight tilt on the *Britannia* model. This must be corrected and at the same time they must be lowered so that the top of the cylinders come at least 1.5 mm below the top of the chassis frame—the new low height of the chassis frame that is shown at A of Fig 1. Packing pieces of 40 thou plastic card cemented together were

**Below:** Excellent view of the completed model before painting shows how 'Schools' parts (black) are combined with plastic card parts (white). Wheelbase is slightly wrong with this model, but this does not mar overall likeness to the real thing. **Opposite page:** Model from right side and close views of smokebox front, cab sides, and footplate detail.



**Below:** Close view of modified chassis front, plus cab from rear.



inserted into the cylinder housing slot on the underside of the chassis frame and, after trial and error adjustments, the cylinders were glued to the plastic card packing using Britfix Epoxy Adhesive. It was not found possible to move the cylinders as far forward as would have been desirable for fear of leaving the rear end of the valve gear unsupported. Approximately 3 mm would be desirable but only half this distance was found practicable. The chassis frame should be scrubbed clean of any metal filing dust before reassembly. Needless to say, the rear

pony truck is left aside!

The next step is the footplate. Fig 2 gives a plan view which should be largely self-explanatory. The splashers and the rear centre section as shown in Fig 2 should be removed; the front end should be re-shaped as shown at A and B of the side view, Fig 4; the valve gear support at C, Fig 4, the rear buffer beam as at A, Fig 5, and the small pips either side of the front end as at E, Fig 2, should be removed. The gaps in the footplate left by the removal of the splashers should be filled in with 30 thou plastic card as

shown by the cross hatched shading in Fig 2 plan view. Before fixing these last-mentioned pieces in place it is advisable to provide clearance for the coupled wheel flanges by scooping out as much plastic card as is possible without cutting right through the material. The rectangular hole at the forward end of the footplate as at F should be filled in with plastic card.

The cab side sheets, Fig 5, effectively become the main support for the extended rear footplate. These and the spectacle plate, Fig 6, were cut from

*Continued on next page*



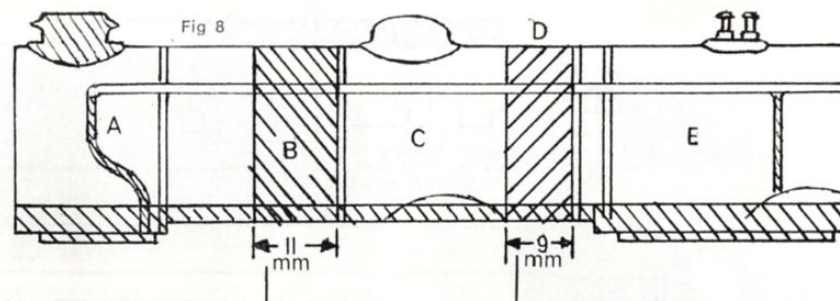
## 'B1' Locomotive—continued

30 thou plastic card. With these parts assembled the footplate should be checked on the chassis. It may be noticed that there is some fouling around the motion bracket in which case either the bracket or the footplate can be filed or cut to fit. The footplate can be fixed at the front end by an 8BA bolt inserted in the foremost of the fixing holes which are very conveniently drilled and tapped in the front of the chassis. With the footplate bolted in place at the front end it will be found that a piece of 30 thou plastic card cut as shown at Fig 7 can be cemented under the rear end so that it slots into the saw-cut at E of Fig 1 to hold the footplate firmly in place on the chassis.

Before cementing Fig 7 into place the rear ends of the footplate under the cab side sheets need extending with a 10 mm wide piece of plastic card the thickness of the footplate—I hope B of Fig 5 will make this clear. After the plastic card pieces and the part at Fig 7 have been cemented in place the underside can be filed to make a smooth transition into the curve of the Airfix footplate.

The boiler can come next and here I must make a confession. One requires two Airfix 'Schools' kits for this conversion. This is because of the length of the B1 boiler, but this need not be a deterrent since the piece taken from the second kit to lengthen the boiler for the B1 can, provided it is taken from the right spot, leave enough boiler material in the second kit to build a D49. Figure 8 illustrates this. One kit provides parts A, C and E to form the boiler for the D49. The second kit provides parts A, B, C and E to which is added part D cut down from B removed from the first kit. These parts form the B1 boiler.

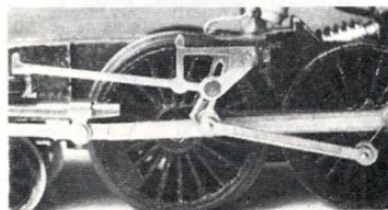
The two sides for the B1 boiler were assembled first; all vertical pipes, the chimney and the plastic handrails were removed and holes drilled using a No 71 drill to take the handrail split pins. The two halves of the boiler were then cemented together and after leaving to dry thoroughly the chimney and the lower part of the boiler as shown at Fig 8 were cut away. The Airfix 'Schools' smokebox front was radically altered by removing the six fixing bolts around the door, removing the handrail and numberplate, and cutting away the base to form a complete circle. Smokebox door handles



Picture far right gives close view of lowered valve gear.

Remove this portion to make D49 boiler; this piece can be used with parts from second kit to form section D of the B1 boiler

Extension piece to form B1 boiler



made of wire twisted and soldered or cemented around a pin were fitted and the smokebox cemented in place. Split pins for the handrail were next fitted, and after adding the handrail and checking that the pins were all the correct height, the ends were opened out inside the boiler to hold them in place. A length of handrail wire was left at the firebox end to fit into holes drilled in the spectacle plate. The boiler was then cemented to the footplate. After the cement had dried thoroughly a mixture of Polyfilla and lead shot was poured into the forward half of the boiler. A strip of self-adhesive tape over the chimney hole stopped the Polyfilla escaping but it was allowed to ooze out of the small holes in the side of the boiler and around the base of the smokebox as a means of filling in these gaps. The surplus was removed when dry.

The rest of the cab, cab steps, etc., were built up with plastic card. Two pieces of 20 thou plastic card curved and laminated together formed the cab roof. The rain strips and centre ventilator were formed from 10 thou plastic card. Holes were drilled with a No 76 drill to take the handrails formed from handrail wire which was bent downwards behind the cab side sheets. Inside the cab the ends of the wire were held in place by pieces of plastic card cemented over the tops and finally by a liberal smear of Isopon. The rear buffer beam was strengthened considerably by cementing the section of the 'Schools' footplate containing the rear coupling hook pivot which was earlier removed from the centre of the footplate. The resulting cab and rear footplate structure is commendably strong and fully the equal of the rest of the body or any other moulded plastic locomotive body for that matter.

To finish the body the gaps in the lower boiler sides left by the wheel arches and the chimney hole were

filled in with Isopon which material was also used to fix the exposed handrail split pins in the rear half of the boiler. Outside steam pipes were carved from plastic sprue and smaller pieces of sprue also formed the sand-box fillers, snifter valve behind the chimney, and whistle. The safety valves were cut from their mounting, the mounting was removed and the valves replaced a little nearer the cab front. The chimney and the nameplates were purchased from Eames of Reading and fitted with Britfix Epoxy Adhesive. The chimney is sold as a J39 chimney but it is near enough for the B1. The lubricator boxes, reversing lever and extensions above the tops of the cylinders under the footplate were made from plastic card scraps. Larger diameter bogie wheels improve the appearance but some filing will be required under the chassis and above the bogie to give sufficient clearance.

Apart from painting, this just about completes the locomotive model. I hope to deal with the tender next month. When first introduced the B1s were finished in war-time black but many were painted in lined green LNER livery after the war. Black style is shown on page 164. The first ten carried the numbers 8301-10 but in the 1947 renumbering scheme they were renumbered 1000-9. They became 61000, etc., after nationalisation when building continued to complete the class of 410 locomotives at number 61409. BR livery was the standard one for mixed traffic locomotives, ie, lined black. One of the B1s, number 61306, built in 1948, has been purchased by the Locomotive Preservation Society for preservation.

AIRFIX magazine



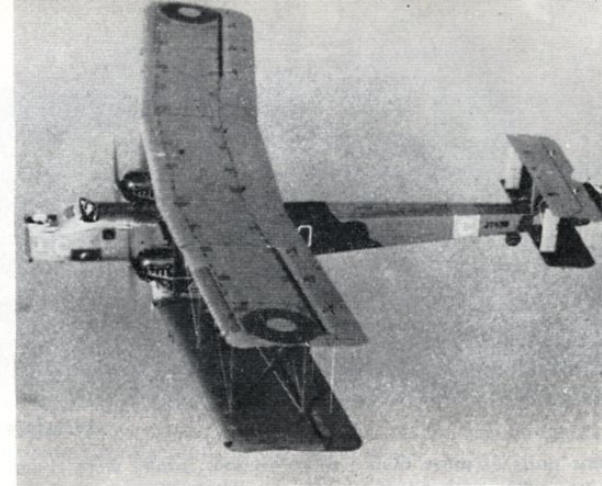
## Part 9: The Virginia Night Bombers

THE most famous of the RAF night bombers between the wars, but essentially a home-based aircraft, the Virginia entered service in 1923, and formed the sole equipment of three first-line bombing squadrons (Nos 7, 5 and 58) from the mid-twenties to mid-thirties, and of a fourth (No 10) from 1932-34. It also formed the main equipment of two Special Reserve Squadrons (Nos 500 and 502) in the 'thirties and, for a period in the later 'thirties, partially provided the interim equipment of four newly re-formed regular squadrons (Nos 51, 97, 214 and 215).

### Overall finishes

While the Virginia will always be associated with the Nivo (dull green) finish of night bombers between the wars, its long years of service spanned finishes from the silver (aluminium pigment) to the camouflage patterns of the second world war. The distinctions can be made quite clearly. Up to and including J7275, the tenth Virginia built, all were in silver finish with standard roundels of red, white and blue. In this finish they first entered service with No 7 Squadron. From J7418, the 11th built, all were delivered in Nivo, the finish that gave a dark green appearance, with night roundels of red inners and blue outers—white being excluded.

However, by 1927 all Virginias were in Nivo finish. Early deliveries were recalled to the works for modification to later standards and were re-doped Nivo after conversion. Virginias up to J8914 were constantly being withdrawn for modification and the accompanying table shows the standard by Mark number to which built and the subsequent conversions of each airframe. Some of the marks refer to changes in rigging and the progressive replacement of wooden structural members by metal parts; the most important change visually was at the Mk VII, introducing a sweep-



A Virginia of the Special Reserve Squadron, No 500, displaying markings on the fuselage of, front to rear, squadron crest, individual letter, squadron number (partially obscured by wings), panel with individual letter repeated, and serial number (J7438).

back on the wings and revising the nose, giving a blunter appearance, and the Mk IX introducing a rear turret among other changes. After J8914 all were produced as Mk X.

This big biplane bomber actually saw service in the second world war. When war was declared in 1939, four were still in service. The oldest was J7130 used at Farnborough for parachute experiments. Nivo finish had been considered a sufficient camouflage in the late 'thirties, when other aircraft were given the disruptive pattern of dark earth and dark green, but by 1939 Nivo was not being stocked and Virginias were given the standard temperate day scheme to be described in later parts. Two Virginias at least were still flying on parachute testing trials during the Battle of Britain; J7710, one of them, was almost literally blown to bits when a gale on December 6, 1940, broke it loose from its picketing, and J7434, the other machine, survived until late 1941 when it undershot on landing at Henlow—where the aircraft of the RAF Museum are currently stored!

In the mid-thirties these two Virginias, with two others, were given an overall roundel red finishing scheme, to give warning of their parachute droppings. After war was declared and the green/brown finish for upper surfaces appertained, the undersides were in yellow. This was the finish for trainers, but was extended to various miscellaneous types for home defence identification purposes—the Virginias hardly qualifying as a well-known aircraft by 1940.

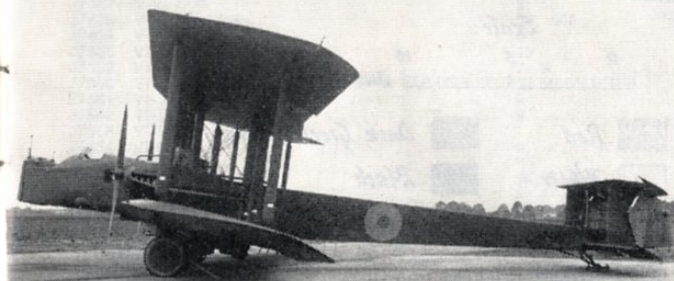
### Unit markings

Although formation flying did not appertain at night, formation flying by day was a regular part of training in night bomber units. Since the individual serial numbers, marked as with other aircraft of the period on rear fuselage and rudder, were in black on dull green, some more distinctive individual identity marking was needed. In practically all squadrons this was given by an individual letter, painted both sides, fore and mid-fuselage.

The establishment of most heavy bomber squadrons between the wars was ten aircraft organised into two flights, so that from December 1924 when flight colours were authorised by the Air Ministry, only two colours were appropriate, red for 'A' and yellow for 'B' flights.

At a time when aircraft were reckoned to average £2,000 a piece (£1,000 airframe + £1,000 engine), a Virginia at £14,000 was in a class of its own and considered worthy in

Continued on next page



Above: Virginia J7715 in standard Nivo and night roundels photographed on May 19, 1928, after being brought up to Mk IX standard. The black serials on fuselage and rudder can barely be discerned on the dark green finish and the serial marked in white under the wing is almost completely lost in shadow (All photos MoD).

December, 1969







## Part 6: Commonwealth and Special Types

AUSTRALIA built her own carriers, based on the British Universal Carrier design, but modified in detail to suit local manufacturing conditions. The system organised for the building of carriers was that various components were made by a number of engineering sub-contractors and assembled in Australian state-owned workshops, the power units coming from North America.

The various models produced are described individually below:

**Carrier, Machine Gun, Local Pattern, No 1:** Basically similar to the British Bren Gun Carrier in appearance, this had welded armour, however, and other minor differences. Clips were fitted to the exterior of the superstructure for various accessories that included an axe, shovel, crank-handle and track tools. Large stowage lockers were fitted on the right side of the vehicle and wireless was carried by some vehicles. Armament consisted of a Vickers .303 inch medium machine gun in the gun housing, though this was sometimes replaced by a .55 inch Boys anti-tank rifle or .303 inch Bren LMG; the Bren LMG was also sometimes carried on an AA mount. Brief details: Crew, 3 or 4; Weight, 4 tons 5 cwt; Engine, Ford V-8, 95 bhp; Speed, 30 mph.

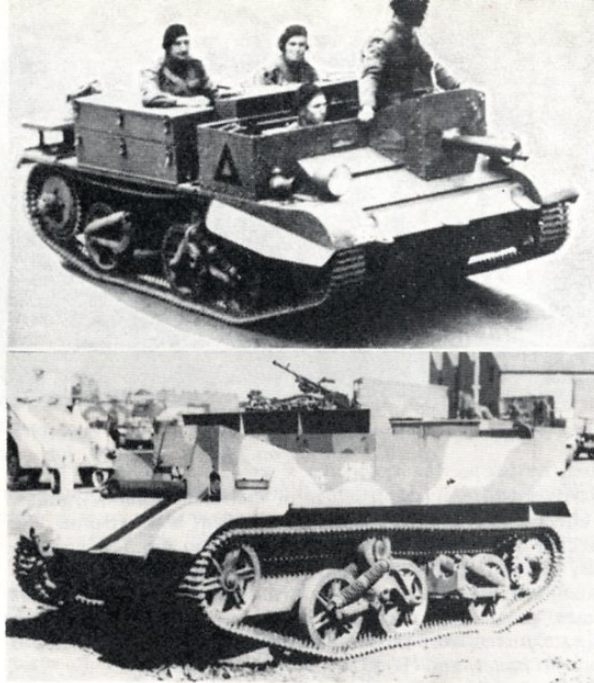


**Universal Carrier, MG, Local Pattern, No 2:** This variation was mechanically similar to LP No 1 but had large lockers at the rear of the vehicle and was fitted with 1938-39 Ford heavy duty commercial truck type rear axles. The major difference was the adoption of the 'Universal' superstructure.

**Universal Carrier, MG, Local Pattern, No 2A:** This further variation was similar to the LP No 2 model, but had standard 1940 Ford heavy duty truck type rear axle.

**Carrier, 2 pdr, Tank Attack:** Designed for anti-tank role, this Australian version consisted of a 2 pdr anti-tank gun mounted on an adapted and strengthened carrier chassis. The suspension was the normal carrier type but with a longer track (182 links as against 176 on the Universal Carriers). The engine was moved from the centre of the vehicle and placed on the left of the driver. The 2 pdr gun with shield was mounted on a turntable at the rear of the vehicle, the gun having a 360° traverse. Ammunition for the 2 pdr gun was carried in containers attached to the right side of the shield. Brief details: Crew, 4 (three gunners and a driver); Weight, 5 tons approx; Engine, Ford V-8, 95 bhp; Speed, 20 mph. A Bren LMG for AA defence was also carried.

Another version of the Carrier, 2 pdr, consisted of a normal carrier with the gun fitted to a hydraulic hoist. This enabled the gun to be raised for firing and lowered when not in use. This equipment was situated behind the driver's com-



**Top:** Carrier, Machine Gun, Local Pattern No 1 was virtually an Australian-built version of the Bren Carrier and had a Bren Carrier type superstructure. **Above:** Universal Carrier, MG, LP No 2 had an all-welded Universal type superstructure.

partment. When the gun was in the down position the barrel lay alongside the driver in a recess cut in the front plate.

**Carrier, 3 inch Mortar:** Like the Carrier 2 pdr Tank Attack, this was a vehicle of modified design with a 3 inch mortar on a turntable in the rear compartment. The mortar could be fired from the carrier, the turntable allowing a 360° traverse. If required the mortar could be dismantled and fired from the ground, the mortar base-plate being carried outside, left of the engine. The mortar bombs were carried in bomb racks arranged around the inside of the rear compartment. Also carried was a Bren LMG for AA defence. All details (aside from armament) were otherwise as for the 2 pdr Tank Attack.

The Universal Carrier, Local Pattern, was also used as a mortar carrier and in this case it consisted of the standard vehicle with the 3 inch mortar mounted on (and fired from) the top of the engine compartment. It could also, of course, be dismantled and fired from the ground.

The Carrier 2 pdr Tank Attack and Carrier 3 inch Mortar were indigenous Australian designs which made use of Universal Carrier components and these types were not built by any other nation.

### New Zealand Carriers

New Zealand also built carriers based on the British Universal Carrier design, again modified to suit local conditions. The New Zealand State Railways workshops were the builders in this case, and the working drawings and machine tools were supplied from Australia. Canada provided Ford engines and other mechanical components. The New Zealand-built vehicles were identical in virtually all respects to those built in Australia. The different models were:

**Carrier, MG, Local Pattern, No 1:** This type was identical to its Australian counterpart produced under this designation, but in this case the vehicles were built in mild steel only to gain manufacturing experience. They were subsequently used for training only in New Zealand. Only 40 of these were made, starting in 1940.

**Carrier, MG, Local Pattern, No 2:** This type corresponded to its Australian counterpart in all respects and was the main production type.

Though the Australian-built carriers were used by Australian and New Zealand forces overseas, few, if any of the New Zealand vehicles left their country of origin and were used in New Zealand only.

### OP Carriers

For the Artillery, the Universal Carrier was developed in a modified form as a command and observation vehicle. The different OP (Observation Post) models produced are outlined and described below. The Mk I was based on the Scout Carrier, described in part 4.

**Carrier, Armoured, OP, No 1, Mk II:** Hull construction was as for the Universal Carrier Mk I, except that an adjustable shutter was fitted in the front gun housing. The engine cover was slightly modified from that on the Universal Carrier. A wireless set No 11 was standard equipment. A crew of three was carried consisting of a driver and observer (with telephone) in the front compartment, and a radio operator in the rear to operate the No 11 wireless set. A drum of telephone cable was fitted to the rear of the vehicle. Specimen WD numbers for these vehicles were: T.17107-T.17359, T.35528-T.36020, T.46782-T.47097. Some vehicles were modified to carry both No 11 and No 18 wireless sets.

**Carrier, Armoured, OP, No 1, Mk IIIw:** This was based on the Universal Carrier Mk III, and was similar to the Mk II OP, but with a welded instead of riveted hull. A crew of four and additional wireless equipment was carried in this version. Two cable drums were fitted, one in the front and one at the rear. WD numbers: T.84621-T.88063.

**Carrier, Armoured, OP, No 2, Mk III:** This corresponded to the Universal Carrier No 2, Mk III. It was equipped as for the OP No 1, Mk III. Built in America, it had the Ford V-8 85 bhp GAE engine.

**Carrier, Armoured, OP, No 2A, Mk III:** Equipped as for the OP, No 1, Mk III, this was based on the American-built Universal Carrier No 2A, Mk III, with Ford V-8 85 bhp GAEA engine.

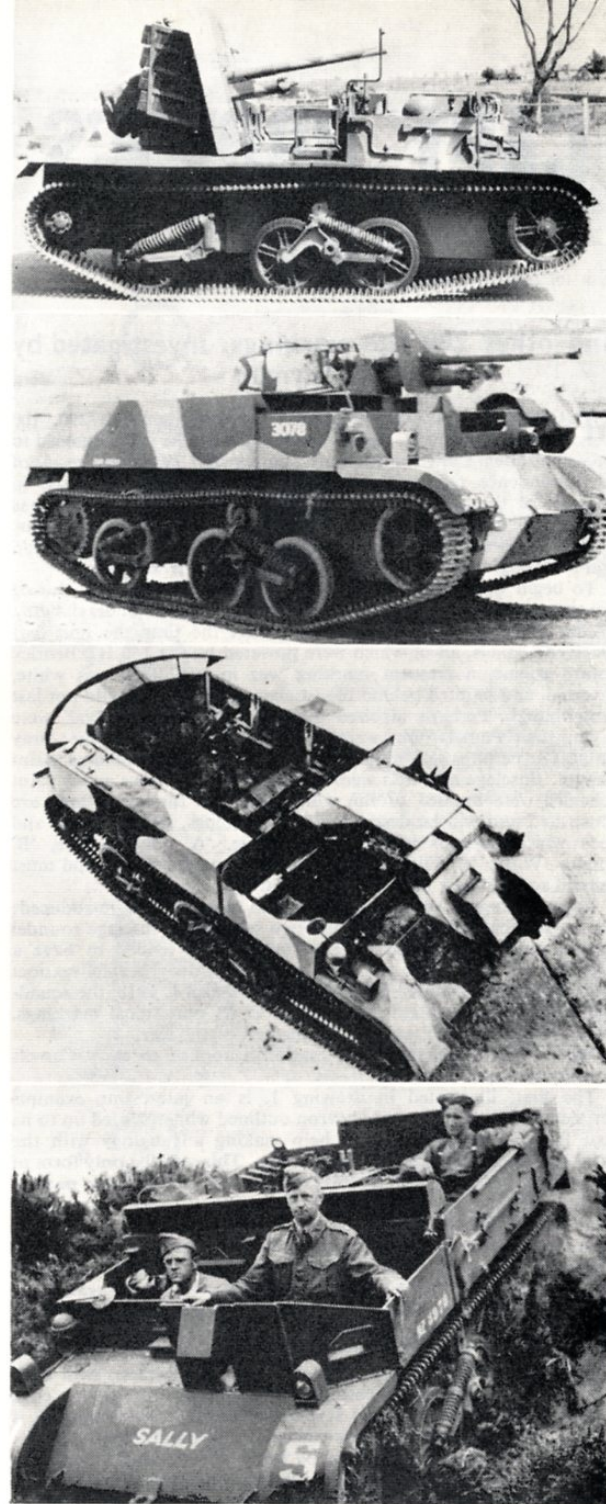
**Carrier, Armoured, OP, No 3, Mk III\*:** Equipped as for the OP No 1, Mk III version, this was based on the Canadian-built Universal Carrier No 1, Mk III\*.

### The 3 inch Mortar Carrier

In 1942 the Universal Carrier was adapted for the transport of the 3 inch mortar, ammunition and crew. The mortar, bipod and base-plate were carried secured at the rear of the vehicle, and the mortar ammunition was stowed inside the carrier, contained in racks either side of the vehicle. The mortar and crew were transported to their firing position, where they dismantled and assembled the weapon for action. Though not a normal practice, the mortar in some cases was assembled in the front gunner's compartment and fired from there. The various models of mortar carrier produced are described here.

**Carrier, 3 inch Mortar, No 1, Mk I:** Basically Carrier Universal Mk I adapted for the mortar role, this vehicle carried a crew of five with driver and front gunner in the front compartment, two men in the rear right-hand side of the hull, and one man in the left rear side. A spare wheel was fitted on the front of the vehicle and a wire tow rope, shovel and pick was carried at the rear. The rear stowage box was removed and brackets were provided in its place to hold the mortar parts.

*Continued on page 185*



**Top to bottom:** Carrier, 2 pdr, Tank Attack was built from standard components to an exclusively Australian design; note lengthened chassis. The Universal Carrier MG, LP No 2 converted to carry a 2 pdr gun on hydraulic hoist. Carrier 3 inch Mortar was on same chassis as Carrier, Tank Attack; note engine moved to front left and mortar mounted centrally. Carrier, MG, Local Pattern No 2 was almost identical to the Australian model but was a New Zealand-built version. It was all welded (All photos Imperial War Museum).



# CAPT BROWN'S CAMELS

And other 209 Sqn markings, investigated by Carl Surman

MUCH has been written about Sopwith Camel B7270, the aircraft Capt A. R. Brown was flying when he was supposed to have shot down Capt von Richtofen on April 21 1918. As a result of correspondence received upon the subject, recently discussed in 'Camels of the Aces', (May 1969 AIRFIX magazine), space has been devoted to an exploration of Capt Brown's Camels in particular and No 9 Sqn RNAS in general. In doing so perhaps an end will be brought to the over extended life of the 'B7270 saga'.

To begin with a basic grounding in '9 Navals' markings, during the time they used Camels may give readers a better understanding of the problem to be discussed later. At the time the unit first received Camels, all of which were powered by the 150 HP Bentley rotary engine, a crescent marking was in use. This was white, inverted, and painted behind the fuselage cockade. This did not last long though. Perhaps inspired by the treatment '10 Naval' were giving their Camels (they were both at the same aerodrome; Bray Dunes) or perhaps self-initiated, the squadron quickly became 'paint happy'. Fuselage roundels were obliterated and various garish paint schemes were applied to the wings, tail and fuselage—three are illustrated and will be described later—in blues, whites, greys, and reds which perhaps indicated flights (ie, 'A' Flight—Blue, 'B' Flight—White, 'C' Flight—Red) but this is only a theory and must remain so until new facts come to light.

Then in August 1918 a new squadron marking was introduced; three white bars, one in front and two behind the fuselage roundel or the position it would have occupied. This tended to have a sobering effect and the coloured markings slowly became extinct until, by the time the RAF was formed on April 1, 1918, the squadron was almost as plain as the RFC in its puritanical markings. These markings were retained for the rest of the war.

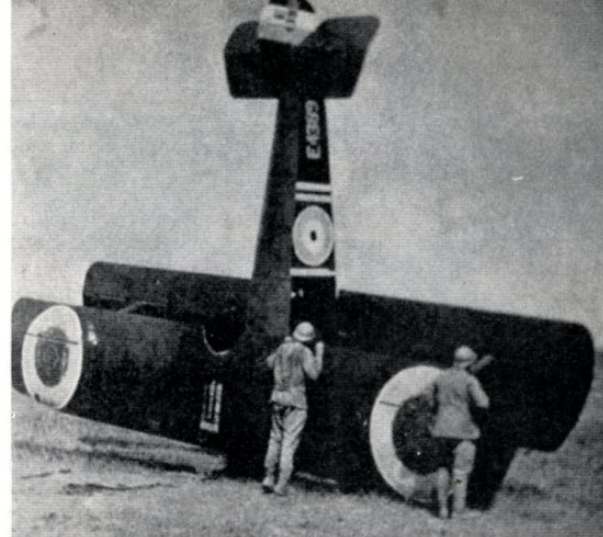
Now on to the examples of markings applied to early Camels used by the squadron.

The first, illustrated in drawing 1, is an interesting example serialised B6230. It had a red chevron outlined white painted on to its rear fuselage and one cannot help making an analogy with the markings later employed by Capt Brown. This was the only form of decoration used on the aircraft. All metal panels were painted brown, as were the wheel shields; the serial B6230 was painted in white on the fin.

The next example of pre-August 1918 markings is more colourful. Drawing 2 shows an aircraft whose number is unknown. It would seem that this aircraft had its fin painted grey. Front and rear upper shields, rear side shields and wheel shields were also painted grey. This left the front side shields in natural metal and the mixture was completed by a blue cowl. The centre section of the upper wing and the tailplane were also painted blue (drawing 2A), with their leading and trailing edges painted white. That on the leading edge of the tailplane also travelled across the fuselage top decking. It is unlikely that this marking was repeated underneath the tailplane.

The markings were completed by fuselage decoration, consisting of thick blue stripes outlined white on the side of the fuselage, and travelling over the top of the fuselage. The upper and side surfaces of this aircraft were otherwise painted standard brown. The fact that this aircraft did not have enlarged window space seems to be typical of squadron practice. The side shields enclosing the gun breeches were cut away on both sides.

Drawings 3 and 3A show the markings applied to a Camel flown by Flight Commander Fall, and it was probably numbered B5749. It followed the decorative pattern set by the previous example, its wheel shields, metal and ply panels being all brown. The name 'MAUDE II' was painted in white at the base of the rear centre-



section strut. The fuselage insignia took the form of a half circle again travelling over the fuselage top and again blue with a white outline. This was repeated on the upper wing, in the form of two true circles.

The tailplane was marked as before, blue with white outlines and the aircraft serial number was white, painted on the fin.

Having taken a look at earlier markings, attention can now be given to B7270, first a review of the evidence:

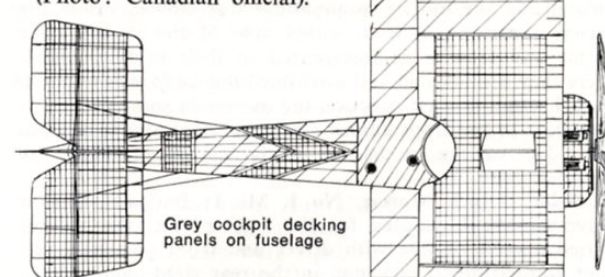
- (1) Three photos, from the Canadian National Aviation Museum. These show Capt Brown with an unspecified Camel. The third shows a squadron line-up. None are dated.
- (2) One photo, from the Imperial War Museum (shown above). This shows a 209 Camel on its nose behind the French lines.
- (3) One photo of Simpson's painting of the Brown/Richtofen combat.
- (4) Capt Brown's description of B7270, written during 1936.

The Canadian photos show an aircraft with dark painted metal panels and wheel shields; a dark coloured chevron outlined white is applied to the centre section of the upper wing. No serials or fuselage roundels are visible but the squadron bar marking is. The aircraft has an Army type windscreen and the starboard side shield enclosing the gun breech is absent.

The 'dark' areas of paint could be a multitude of colours, but it is more likely that it was normal 'Ident Red' or, as will be seen later, it could also have been maroon. Anyway it is illustrated in drawings 4 and 4A.

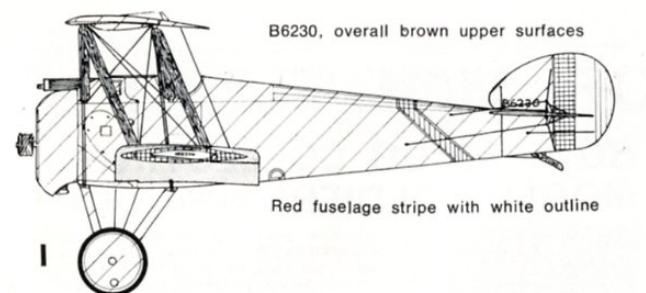
The IWM Camel photo, being dated, is more definite. This air-

**Heading: E 4389 in post-August 1918 markings, with the white areas of the top wing roundels darkened. This aircraft is being inspected by French troops who have just captured the area (Photo: Canadian official).**

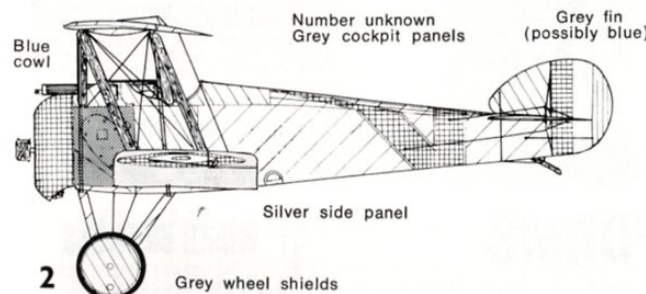


2A

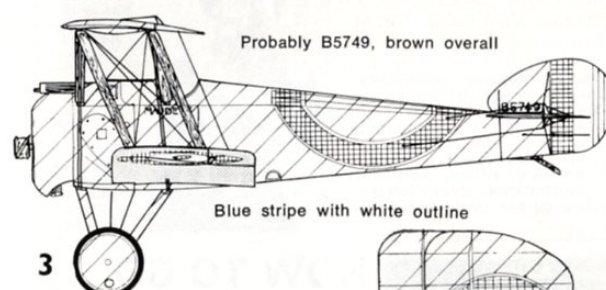
Except where noted all upper surface decoration in drawings 2A and 3A is blue with white outline



1



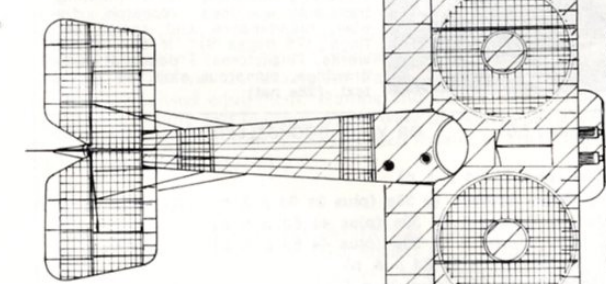
2



3

All aircraft drawn have doped 'natural' fabric under surfaces

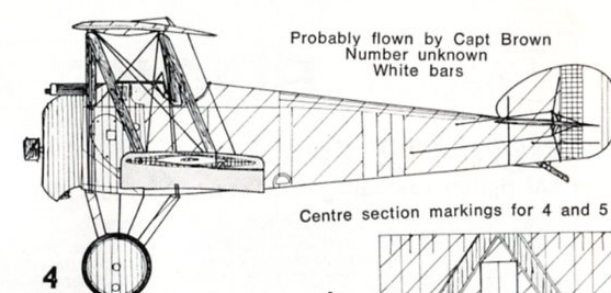
**Drawings 1-3A**  
Examples of 9 Sqn Camel markings in use before August 1918.



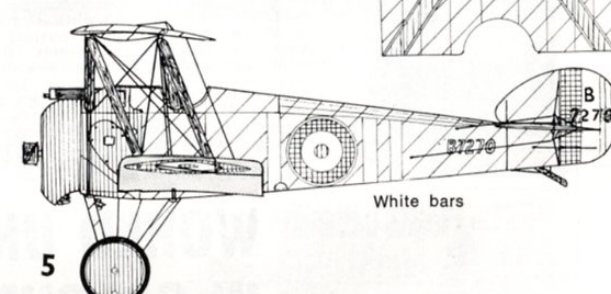
3A

All drawings are keyed to references in text

December, 1969



4

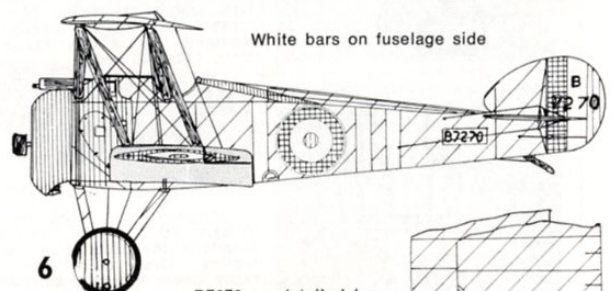


5

B7270 as portrayed by Joseph Simpson

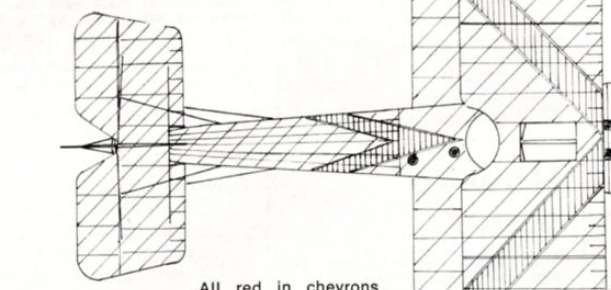
0 1 2 3 4 5 6

1:72 scale



6

B7270 as detailed by Capt Brown



6A

All red in chevrons and on nose and wheel discs darker than usual shade

Note: All wing chevrons and fuselage stripes on aircraft shown are outlined in white



# PSL BOOKS FOR MODELLERS

## fighting colours

RAF fighter camouflage and markings 1937-1969

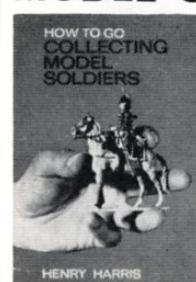


By Michael J. F. Bowyer

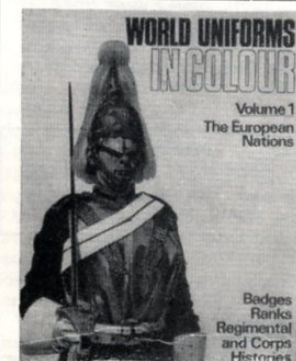
Michael J. F. Bowyer, well-known contributor to 'Airfix Magazine', details the development and changes in camouflage and markings of all Royal Air Force fighter types from 1937-1969 and lists the serial number allocations of every RAF fighter ever flown in that period. He records comprehensively how RAF colours altered over the years, against the background of contemporary events. Each chapter is illustrated with detailed line drawings depicting specific aircraft in typical markings of the period, with 139 individual photographs, there are 157 excellent appendices giving precise data on all RAF fighter types since 1937. 192 pages, 8½" x 5½", case bound. (35s net)

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By Henry Harris



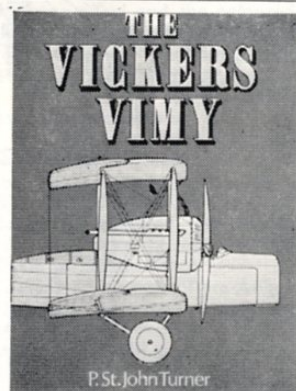
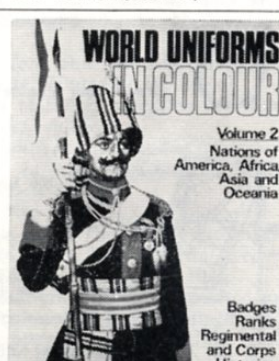
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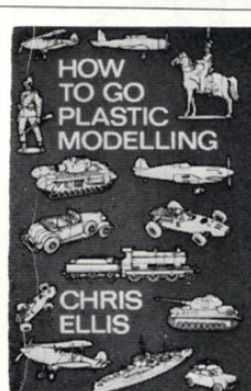
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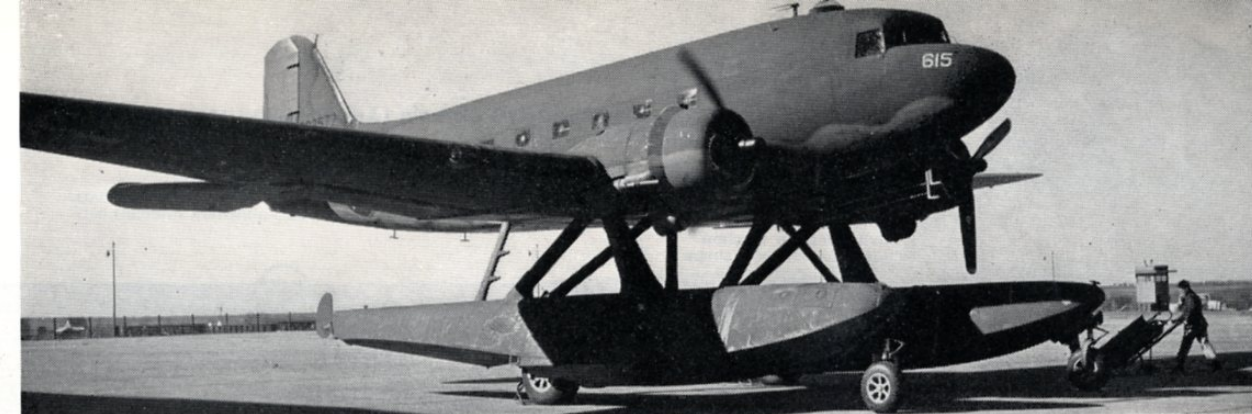
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A superb view of the amphibious C-47C running up its port engine preparatory to take off for a test flight. Note the code 615 which was added to the nose. Earlier on, when depicted by our scale drawing, this number was not carried (McDonnell-Douglas photo).

# More Dakota Conversions

C-47 Amphibian and Soviet Li-2 models by Alan W. Hall

THE Airfix model of the C-47 Dakota, in spite of a fault in its wing dihedral, is one of the most useful of aircraft kits. Apart from the usefulness of its many bits and pieces there are a number of conversions, both simple and more complicated, which can be produced from the basic kit. Here are two quite simple conversions from both sides of the Iron Curtain which will be of interest to both second world war and Russian aircraft enthusiasts. Both require a lot of digging into the spare parts box which only goes to emphasise the importance of keeping odd wheels, canopies and engine nacelles from other kits.

The first conversion I considered was the US one. Here I produced a C-47C floatplane which was used experimentally by the USAAF in 1943 in an endeavour to provide an amphibious aircraft which had the usefulness of the ordinary Dakota for combat duties in the Pacific, where the vast expanses of water were providing difficulties for the Army in supplying its forward troops in the island to island battles.

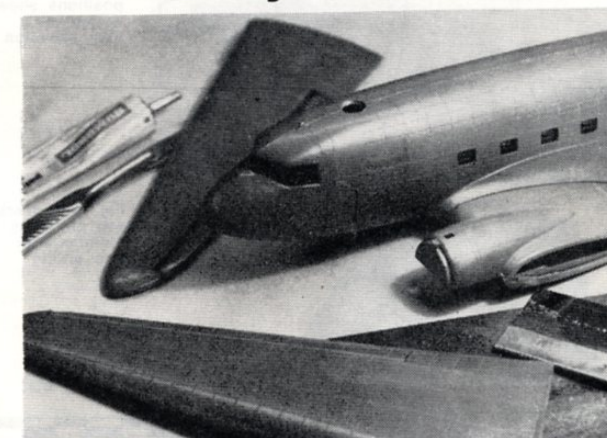
Aircraft of the Fighting Powers, Vol 5 provided the inspiration for this conversion as a reasonable plan existed and a number of good photographs. One or two of these plus a lot more interesting information appear in William Green's *Aircraft of the Second World War*, Vol 6, *Floatplanes*. The waterborne Dakota started life in 1943 at La Guardia Field, New York, when American Airlines converted a standard C-47A to have twin Edo Model 78 floats. Each float had a retractable main wheel and another wheel in the extreme nose providing space in between for additional fuel capacity of 250 imperial gallons between the bulkheads.

The aircraft first flew in June 1943 and later that month went to Wright Field for evaluation. It was easy to handle on water and reports indicate that the amphibian found greater favour with the test crews in ground handling as well. The addition of the floats reduced the speed by 30 mph. Practicability tests proved, however, that the C-47C was unsuitable for Pacific operations as servicing needed specialised equipment. Ramps and docks were needed to facilitate handling and loading. These were obviously not available in the primitive conditions in the intended theatre of operations and the project was abandoned.

## RUSSIAN DAK

The second conversion this month was inspired by a reader's letter. Mr J. McFarland of the Irish Society of Aviation Enthusiasts sent us several most useful photographs of a Russian Li-2 taken at an Austrian air display at Wiener-Neustadt in June of this year. Apart from considerable numbers of Dakotas sent to Russia under Lease-Lend agreements, licence production started before the war and the Dak has been in service for many years with both the Soviet Air Force and earlier with Aeroflot.

Unfortunately few photographs of Russian-built Dakotas are available and as this particular aircraft was unusual I thought it

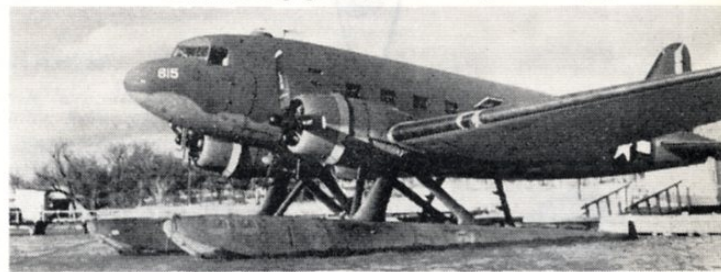


Though not absolutely essential it improves any model of the Airfix Dakota to saw off the outer wings and re-cement them at an increased dihedral. Beginners can omit this stage if desired.

worthy of suggesting how it could be converted from the standard kit.

Although 18436603, the aircraft photographed by Mr McFarland, was a freighter (it brought a V-tailed A-13 sailplane to the air display) it had obviously been used as a passenger aircraft, probably with Aeroflot earlier in its career. The interior was partly furnished in dark blue and light grey and the floor had a small section covered with embossed linoleum with a floral design.

Continued on page 178; scale drawings on next page



Another view of the amphibious C-47C, this time afloat and showing the later 'stars and bars' markings and the 615 code. Note the makers' markings on the prop blades.



# Douglas C-47C Skytrain (Amphibious), USAAF, 1943

Stars on upper port wing and lower starboard wing tip only, same style as fuselage but positioned as for US stars in the kit instructions

White serial number  
Standard blue/white US insignia

De-icing boots on wing, tail fin, tail plane leading edges are black

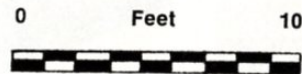
Under surfaces Neutral Grey; upper surfaces Olive Drab  
Use Humbrol Authentic Camouflage colours from US set (see text)

Left: Plan view of centre-section to show float position and shape

For front elevation see page 178

Inner strut positions shown dotted in side elevation

For later markings see prototype pictures with this article



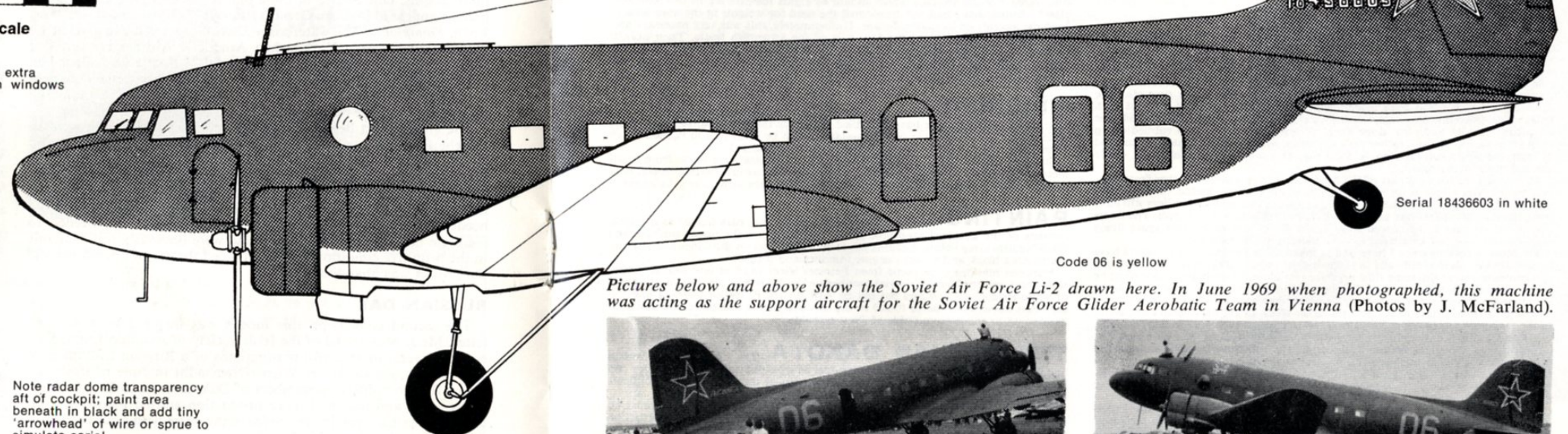
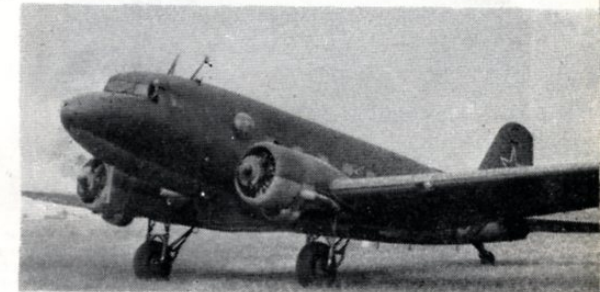
1:72 Scale

Note extra cabin windows

Note: no D/F loop or de-icing boots on this machine  
White outline to red stars

Note: Soviet stars are carried on upper and lower wing tips in usual positions, though not shown on drawing  
Note door with extra side window

Remove tail wheel



Serial 18436603 in white

Code 06 is yellow

Pictures below and above show the Soviet Air Force Li-2 drawn here. In June 1969 when photographed, this machine was acting as the support aircraft for the Soviet Air Force Glider Aerobatic Team in Vienna (Photos by J. McFarland).



Note radar dome transparency aft of cockpit; paint area beneath in black and add tiny 'arrowhead' of wire or sprue to simulate aerial

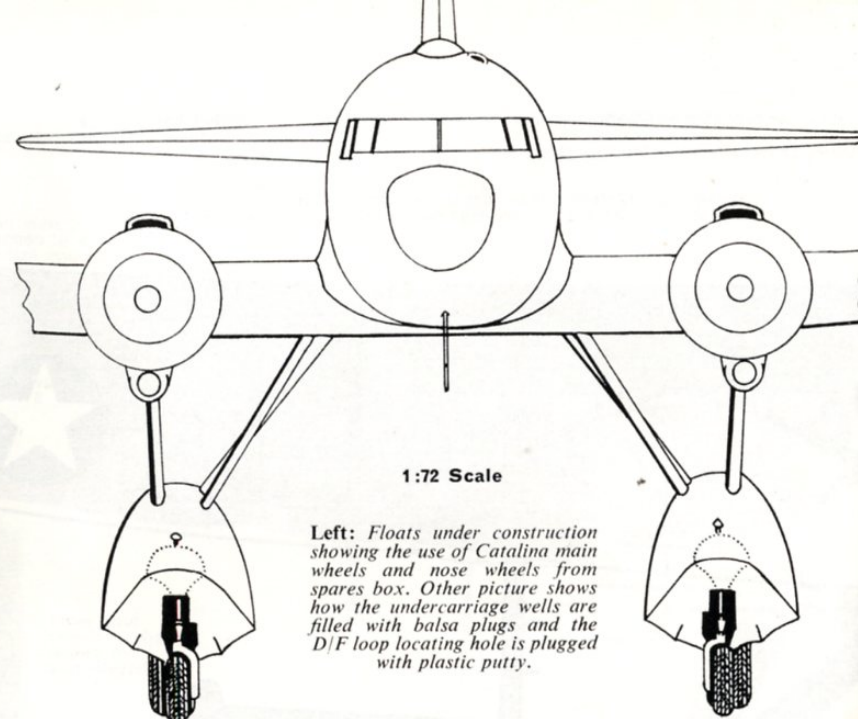
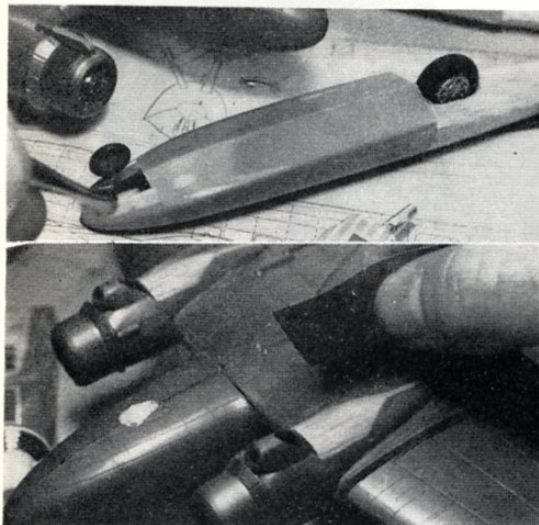
Li-2 of Soviet Air Force, June 1969

Drawings by Richard E. Gardner

## Colour notes for Li-2

Upper surfaces Dark Olive Green (Humbrol 30 or Airfix M3) with very slight gloss sheen; add drop of gloss varnish to paint before application  
Under surfaces Duck Egg Blue (Airfix M8)  
Wheel hubs Dark Olive Green  
Undercarriage legs Duck Egg Blue worn to bare shiny metal on oleo legs





Left: Floats under construction showing the use of Catalina main wheels and nose wheels from spares box. Other picture shows how the undercarriage wells are filled with balsa plugs and the D/F loop locating hole is plugged with plastic putty.

## CONVERSION DETAILS

Due to restrictions on time I was only able to completely build the C-47C before copy date for this issue, but a dry run on the Li-2 showed that this was not too difficult to make. In both cases the wing dihedral of the Airfix kit has to be changed and as this is a standard modification when building any Airfix Dakota, I have dealt with this first.

After assembling the fuselage and wings separately, but in accordance with the kit instructions, the outer wing panels are removed with a fine toothed X-acto razor-saw. By rubbing the cross section upper edge down on 'wet and dry' or glass paper the increased angle can be achieved. The centre section is also given this treatment but here the cross section must be held flat on the glass paper.

Both the outer and centre sections are then re-cemented in position with a liberal amount of adhesive. Leave the whole to set very thoroughly in the correct position by placing small blocks of balsa under the outer wing tips and a small weight on the centre section. I have found in a number of conversions with the Airfix Dakota kit that in every case this works out entirely satisfactorily. There is sufficient plastic to make a good joint and provided the wing is not moved whilst setting the fault in this kit can be readily overcome. A small amount of rubbing down may be necessary on the wing joints after these have dried out but if care is taken this can be kept to a minimum.

## MAKING THE FLOATS

The fuselage, wings, engines and tail unit of the C-47C are standard and therefore it is not necessary to go into any detail in this article as the kit instructions are adequate. The only additional work needed on these parts, apart from the wing dihedral, comes on the underside of the engines which must be filled with a small balsa plug to take the struts connecting this point to the floats. This work can be done at any time after the fuselage and wings had been assembled. The undercarriage area is filled with balsa and rubbed down to complete the nacelle shape. It is then given a good coat of talcum powder and clear dope filler, allowed to dry and then rubbed down until smooth. Balsa wood rather than any other form of filling material was used as later the struts will have to be fixed into this section so a fairly soft, easily worked material is needed.

In my case the forward part of the floats came from spares left over from converting the Merit 1:48 scale Swordfish floatplane to the wheeled version. They were ideal for this purpose though I do not suppose that many modellers will have these items in his spares box as the Merit Swordfish is now a rare item. The floats will therefore have to be carved from wood unless you have other spare floats which match—or can be altered to—the pattern in the drawing.

On other occasions when I have had to make floats for an aircraft model I have almost always run into difficulty in achieving the rather subtle shape. To overcome this problem and at the same time produce two identical units great care must be taken and careful study made of the plans before starting work. Start by making sure that the oblong block of balsa from which the shape is to be carved is square. You will obviously have to cut down a larger block to get the overall dimensions of the Dakota floats and it is very important to ensure that a correct start is made.

Using a ball pen I draw centre lines down the four sides of the oblong and the largest part of the cross section on the ends. The top half of each float is carved first and both units go through this process at the same time to make sure that they are the same. Having got this part right (and do not be afraid to discard anything unless this is correctly achieved), the underside can be continued. The step is cut first and then both fore and aft of this line working outwards.

Before giving the finished items a coating of filler the recesses for the undercarriage must be drilled out and prepared. The manufacture of a fully retracting undercarriage is not practicable for the average model maker and I therefore do not suggest that this should be attempted.

The main wheels came from spares left over from an Airfix Catalina kit which I had converted to the full flying boat variant. These were simply sunk into the underside of the floats and stuck in position after the painting of the float had been

finished. Wheel wells for the nose undercarriage members were cut out squarely using a knife and file to get the right angles at the corners after drilling had been completed. Undercarriage legs for the nosewheels came from an Airfix Lightning kit cut down in size and reversed back to front so that the 'V' shaped part of the oleo pointed forwards. Any small wheels from your spares box which fit the diameter shown on the plan can be used. Construction was completed by adding undercarriage doors cut from plastic card. Similarly the water rudders were made from plastic card and stretched sprue was used to make the mooring cleats on the nose of each float.

I made the two main upright struts which connect the float to the underside of the nacelle from wood. It was easier to use this as the section was fairly thick and as additional strength was to be given by the remaining structure in plastic card the rather fragile nature of the wood was considered acceptable. Locating holes were drilled in the top of each float and the underside of the nacelles. Similar holes were made in the under-surface of the fuselage to take the angled struts. When complete the assembly came out extremely rigid and well able to support the rather heavy fuselage of the Dakota.

## WEIGHTS IN THE NOSE

It was at this point that I discovered a major mistake which should by rights relegate me to the beginners class! I found that I had not considered the need for weights in the nose area to keep the aircraft on its undercarriage. Unfortunately, this was very necessary and I was lucky in having used the fore part of the Swordfish floats. Their hollow interiors took a great amount of lead shot and Plasticine which made up for my earlier omission. If you are starting the conversion, however, be sure to weight the fuselage nose at the beginning.

## FINISHING

As no D/F loop under the nose was in evidence on this aircraft, the locating hole has to be filled. Similarly the rear window close to the main door on the port side of the fuselage has to be filled in and rubbed down before painting can start. The tail-wheel well is also deleted.

Steps on the rear strut between the floats and fuselage were made from small pieces of stretched sprue stuck in place and when dry covered with a liberal coat of thick filler. This gave the streamlined appearance of the step quite satisfactorily.

## PAINTING

The C-47C paint scheme is very easy indeed as it merely consists of the standard Humbrol HU2 Olive Drab on the upper surfaces and HU3 Neutral Grey below. Leading edges de-icing boots on the wings and tail unit are painted black and so were engine interiors and props.

National markings can come from Letraset Sheet M22 or any similar water-slide sheet and the aircraft's serial number on the fin is best made from the sheet of white letters and numbers put out by AIR decals. Propeller warning lines on the floats came from spares found in the bits and pieces box but could easily be painted on or made from strips of sheet transfer.

## THE RUSSIAN DAKOTA

The Li-2 seems to present few problems. I did not complete this model as time did not allow but a dry run proved all that I needed to know to see the model through the most difficult stages.

As far as the fuselage is concerned the big cargo and access doors must be eliminated from the port side. This means that in the early stages of construction the doors and framework have to be liberally coated with plastic wood or putty and rubbed down vigorously so that all traces (plus the hinges) are removed. A new door on the starboard side is needed. Note that this is in line with the original door on the port side and you can use this as a guide to the precise position on the starboard side. On the port side a new door is required further forward, as in the

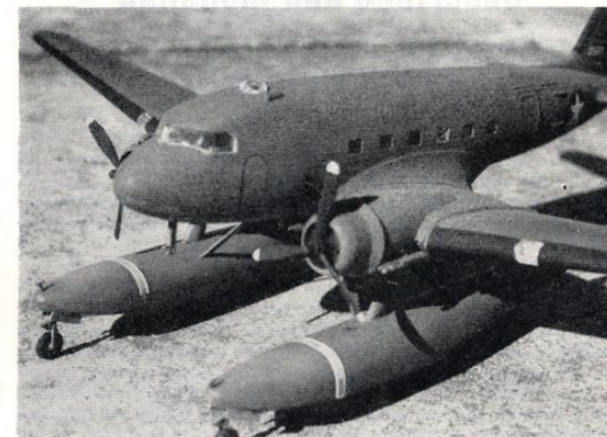
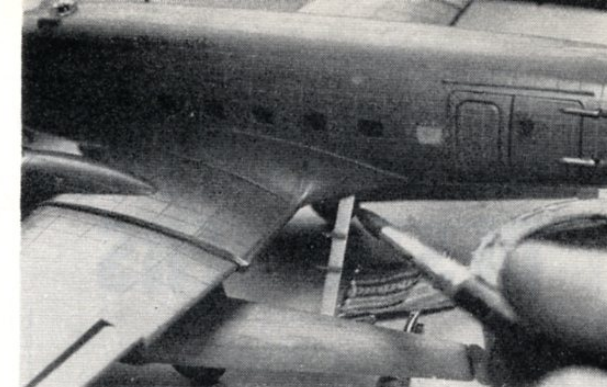
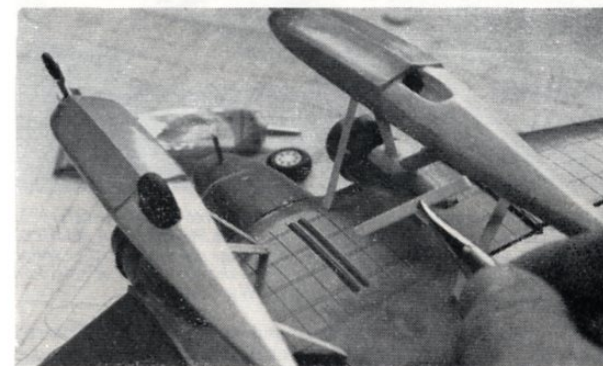
drawing. Mark out the new door shapes from the plan. They can be either scribed in or actually cut out with new plastic card doors added.

The large radome blister on the port side aft of the cockpit matches that from a B-29 astrodome (one wonders if this was not the origin of the actual transparency) and a hole can be carved in the fuselage to take it. If you've no spare B-29 astrodome, seek out something the same size from your spares box.

Engines are a bit more of a problem. The Airfix Harvard Kit engine cowls are the obvious choice but seem to be slightly on the small side. I found after a little investigation that the most suitable were from the Revell Condor but here this kit is not in ready supply and most shops do not stock it. The Harvard or a cut down nacelle from another kit would therefore have to suffice for the average model maker. The other alternative is to carve new nacelles to match the drawing, using a dowel of a suitable size.

Note that the undercarriage legs on this aircraft are different from standard. Although basically the same, the rear strut is quite different from the kit offering and must therefore be made from heat treated sprue. Apart from one or two small fuselage 'bumps' and different aeriels the rest of the Li-2 model is the same as the Dakota.

The colour scheme for the aircraft seen by Mr McFarland was a semi-gloss olive green on the upper surfaces and on the undersides a darker shade of semi-gloss duck egg blue. The letters '06' were in yellow with a thin black outline, while the fin serial was stencilled in white. The aircraft did not carry de-icing strips on the wings and tail unit and the national insignia were standard red stars with white outlines.

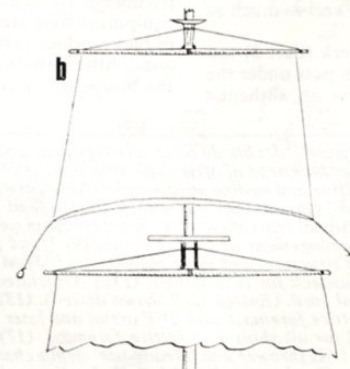
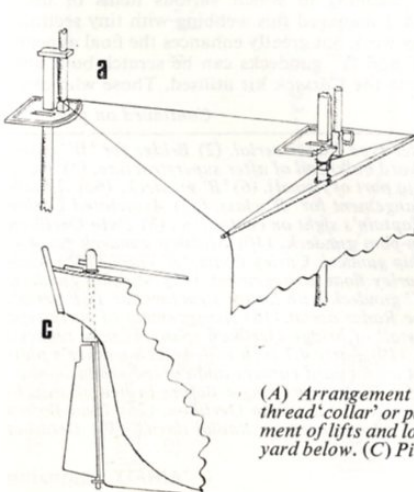


Left: Fitting the plastic card float struts in place. Top: Adding the steps on the struts from sprue. Above: Completed model.

## Sailing 'Endeavour'—from page 163

nal ship. The drawings illustrate the methods described.

The gaffsail is attached to its spar and swings in the location on the mizzenmast and is held in position by a stay from the masthead; the tails on the lower corners are attached to the tiller—forward one to the tip, the rear to the pivot post. The sail will then control the rudder, as we haven't a live helmsman on board. A variation of this is to cement another spar to the lower edge of the gaffsail with its forward end swinging on the mast and a single tie to the tip of the tiller.



(A) Arrangement of braces round adjacent mast. Note also thread 'collar' or parral band to allow yard to swing. (B) Arrangement of lifts and looped thread ends for sheets which are taken to yard below. (C) Pivoting the rudder by method described in text.



Reader D. G. Wrake sent this fine view showing three DH 9As of 47 Sqn in 1927. Nearest is BIII:J7842 and second is BI:J7086 which was drawn in 'Bombing Colours' in the October issue. A relative of Mr Wrake's served with 47 Sqn at this time.



# WAR EMERGENCY DESTROYERS

The 'O' to 'Z' classes described and modelled

By PETER HODGES

LAST month, I dealt in some depth with the background to the development of the Emergency Classes of destroyers. This month, the conversion of the Airfix *Cossack* kit will be discussed, and various tables and drawings will enable the modeller to produce a variety of vessels.

## MODELLING THE VARIANTS

As I mentioned in the first part of this article, because their equipment was rather makeshift, and also because their hull lengths were slightly less than the later ships, neither the 'O' nor the 'P' classes are detailed here. Similarly, the large 'C' group underwent considerable change within itself, and will form the subject of a separate article.

This leaves the ships tabulated, the details of the vessels chosen being shown in the Equipment Table. Inspection of this will reveal all the differences in armament layout, themselves covered both by full size drawings for 1:600 scale, and by free-hand sketches.

For completeness refer to last month's Class List. The vessels met a variety of fates, as can be seen from the 'Disposals' column. It is interesting to note that the 'lead ship' of the 'S' and 'T' classes perpetuated the name of a famous Naval Personage, and that this was continued in the following classes, giving them each one 'odd man out' which was usually fitted as the Leader. Unhappily, *Hardy*, like her earlier namesake, was a War Loss.

In an attempt to leave the drawing as basic as possible, those items of equipment which were standard throughout the classes (eg, torpedo tubes and fo'c'sle arrangements) are omitted, as are details of boats and Carley Floats.

## BUILDING SEQUENCE

Modifications to the *Cossack* hull are straightforward. The length of the fo'c'sle deck needs to be reduced to 68 mm and the break of the fo'c'sle shortened to suit. Next, the rounded stern must be cut off and a new 'transom' fitted. Cut this well over size and then file it to suit when the cement has set, making the quarters slightly rounded. At the same time, flatten off the upward curve of the keel as much as possible.

Cutting back the fo'c'sle deck makes the main deck (Part 3) too short, so an extension is needed at main deck level to pass under the fo'c'sle deck. Make this plenty long enough to give an authentic 'entry' effect beneath.



Above: A close view of HMS Rotherham in 1945 as she transfers oil fuel from the carrier Illustrious in the Far East Fleet. Useful details to note are the single Oerlikon mounts in the wings abreast the after radar mast, bridge wings with twin Oerlikons, and the early type of shield on the 4.7 inch guns (Imperial War Museum).

When these decks have been fitted and cemented in place, extend the fo'c'sle towards the funnel, to conform to the drawing and remove the base of the superstructure from the main and fo'c'sle decks. All holes need to be plugged, either with plastic sprue or with modelling putty. Anchors in each hawse-hole can be cemented into position at this stage.

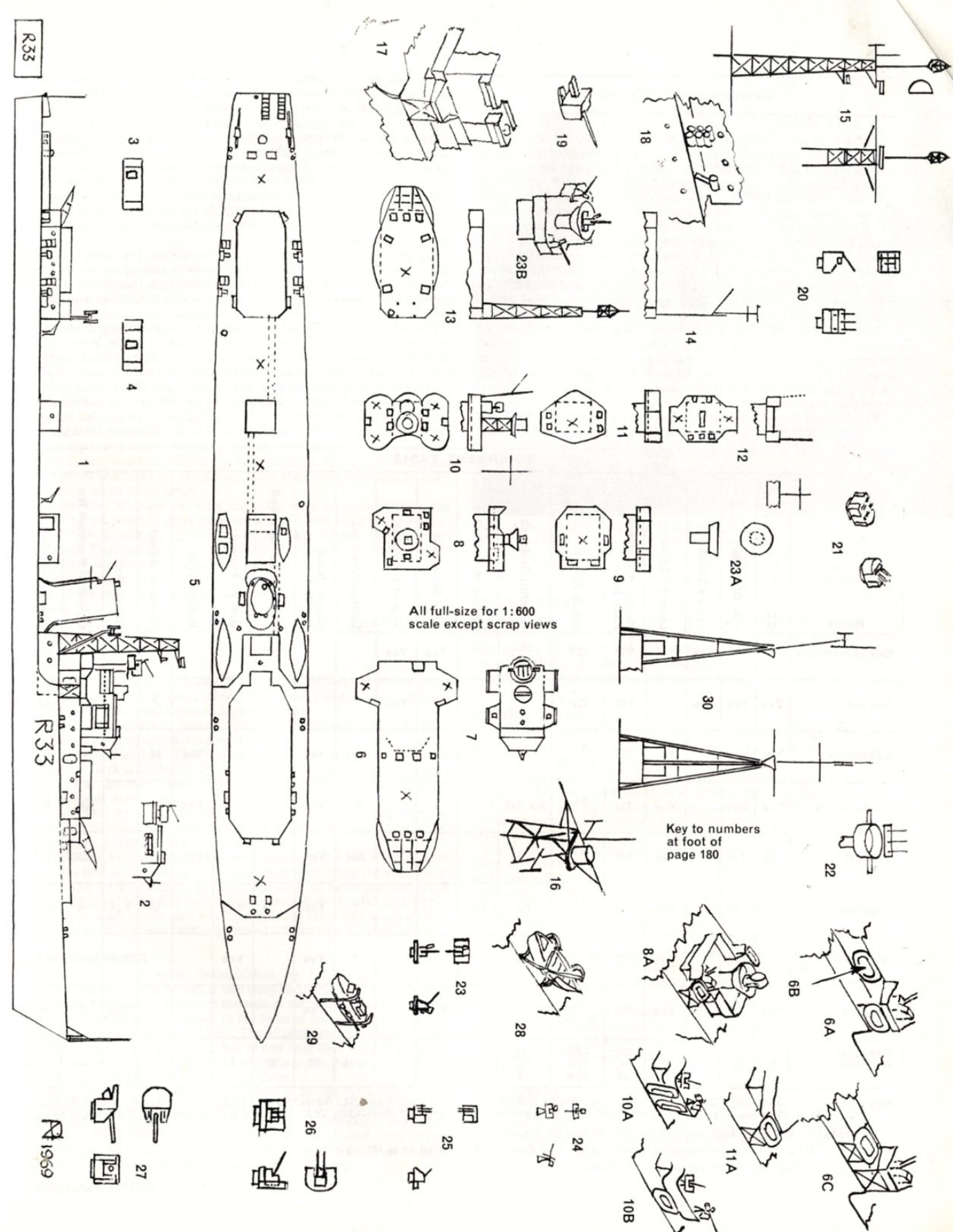
The hull is now ready for fitting-out. Starting right forward, make up the jackstaff tripod from plastic sprue, and then cement the (wooden) jackstaff on to it. In due course, the steel tripod will be painted grey, while the jackstaff itself will be pale brown.

The detail of the superstructure is largely a matter of choice. I made it all from scrap and plastic sheet, drilling the portholes before assembly. Screen doors can also be cut at this time if they are to be depicted in the open position, but don't do this if your model, like mine, is 'coming up harbour', because then all doors are closed. If they are to be open, cement a tiny piece of plastic in the fully open position and paint the inside of the door white. This gives a good contrast effect.

The blast-shields above 'A' and 'Y' guns were divided into compartments by shallow webbing in which various items of deck equipment were stowed. I managed this webbing with tiny sections of paper, which is fiddly work but greatly enhances the final appearance. Alternatively, 'B' and 'Y' gun decks can be scratch-built and the bridge structure from the *Cossack* kit utilised. Those who elect

Continued on page 182

(1) Basic profile, with short lattice foremast, gaff on funnel, 'double director' arrangement and later type Radar aerial. (2) Bridge for 'W' class. Similar for 'Z' class, but with Power Director. (3) After bulkhead of after superstructure. (4) Forward bulkhead of after superstructure. (5) Basic deck plan showing centres of rotation, tripod mast position and outline of cat-walks (Note catwalk to port of funnel). (6) 'B' gundeck. (6a) Associated Carley float arrangement for 'Q', 'S', 'T' and 'W' classes. (6b) Associated Carley float arrangement for 'R' class. (6c) Associated Carley float arrangement for 'V' and 'Z' classes. (7) Bridge. Signal searchlights on wings; compass and Captain's sight on centre line. (8) Twin Oerlikon gundeck with searchlight platform. (8a) Associated arrangement of Carley floats. (9) Quad pom-pom gundeck. (10) Midship gundeck for 4x single Oerlikon, searchlight platform, Warning Radar structure, and short mainmast. (10a) Midship gundeck Carley floats, 'R' class. (10b) Midship gundeck Carley floats, 'Q' class. (11) Midship gundeck for twin Bofors. (11a) Associated Carley float arrangement. (12) Midship gundeck for 2x twin Oerlikon, with stump mast and W/T aerial yard. (Ensign staff shown dotted). (13) 'X' gundeck with lattice structure for D/F aerial. (14) Radar mast, 'Q', 'W' and 'Z' classes. (15) Tall lattice foremast with D/F aerial and later type Radar aerial. (16) Arrangement of early type warning Radar 'lantern' on foremast; yardarm detail for all ships with lattice foremast. (17) Detail of bridge Oerlikon sponson; note reduced splinter shield height outboard. (18) Arrangement of D/C thrower and 'Ready-use' depth charge. (19) Early 4.7 inch with breech-worker's platform. (20) Power operated director for 'Z' class. (21) Quad pom-pom with angled splinter shield on forward corners and curved shield in rear. (22) Simplified HA Rangefinder Director. (23) Single 40 mm Bofors mounting. (23a) Platform for super-firing single Bofors in lieu of searchlight (Tumult only). (23b) Arrangement of single Bofors gun deck (Tumult only). (24) Single Oerlikon. (25) Twin Oerlikon. (26) Twin Bofors (Hazemayer). (27) Later 4.7 inch (and 4.5 inch for 'Z' class). (28) Arrangement of girders. (29) Motor boat on Radial davits. (30) Detail of tripod foremast.





## Destroyers—continued

to build their own bridge will produce a much nearer approach to scale, particularly in the thickness of the windshields of the various sponsons. It is worth remembering that in 1:600 scale, 1 mm almost exactly represents 2 ft (there being 25.4 mm to the inch, and 1 inch representing 50 ft). This is a most useful yardstick in making paper bulwarks, and so on, and also in judging the size of lockers, winches, etc. The bridge sponsons had wind deflectors fitted to their upper edges, best modelled by a narrow strip of thin plastic.

Notice from the drawing the Rangefinder Director with its range-finder 'arms', 'fishbone'-style radar aerials, and the hollow effect, gained by wrapping a thin strip of paper around a disc of plastic. There is also a servicing platform on the director pedestal with a windshield around it.

HMS *Rocket* had a tripod foremast, easily made from Airfix kit components but better made from thin plastic sprue. Lattice masts present a nice challenge, but are much more easily made than may be imagined. If necessary, reduce the number of units in the lattice, because the difference will hardly notice; but do use the thinnest sprue that is manageable.

The *Cossack* fore funnel can be used for all the models, but build out the base with putty and smooth it down to give a slightly 'belled'

effect. Add the waste steam pipes, the siren pipes, and the siren platform, and also a stub exhaust projecting just above the rim.

The 'Qs' and 'Rs' both had the early mark of 4.7 inch which is available from the *Hotspur* kit. However even this is not quite accurate and needs some modification. An unnecessary projection has been included on the right rear of the gunshield which should be cut off. A projection *did* exist in the rear on that side, but it was in fact, a platform for the breech-worker. Modellers who wish to correct this, should make a new platform from thin plastic and cement it level with the *base* of the mounting on the right hand side. It was usually covered by a wooden grating, so must be finished matt light brown at the painting stage.

All sixteen ships had a 'Quad' pom-pom abaft the funnel, available from the *Cossack* kit. Again, it needs modification, in the form of a splinter shield in rear and in front. A thumbnail sketch shows what is necessary. All other types of gun mountings are made from scrap to the dimensions of the drawing.

The 4.7 inch gun in 'X' position was comparatively high and unobstructed, and had special arrangements to allow it to train through very nearly two complete revolutions before its stop-gear operated. Quite often it was stowed pointing forward instead of aft.

Torpedo tube mountings can come from either the *Hotspur* or the *Daring* kits. The latter can be cut down by one tube to make them 'Quad' mounts, but on the whole the *Hotspur* units are far better. They do, however, need the addition of a cupola, made from scrap

EQUIPMENT TABLE

Name	DC	HA Director	Early 4.7 inch	Later 4.7/4.5 inch	Bridge Armament Each Side	Abaft Funnel	Midship Gundeck	Lattice Mainmast	Pole Mainmast	Tripod Foremast	Lattice Foremast	Stump Mast For W/T Aerial	Stump Mast with Gaff	Gaff on Funnel	Ensign Staff	'Lantern' Aerial	Cat-walks	Colour of Pendant No	Camouflage Scheme
Queenborough	Yes	Yes	Yes		SO	QP	SL 4x SO		Yes	Yes			Yes					W	AS
Rocket	Yes	Yes	Yes		TO	QP	SL 4x SO			Yes			Yes			A		B/W	43
Saumarez	Yes	Yes		Yes	TO	SL 2x TO	TB	Yes			SH	Yes			Yes	M		W	WA
Terpsichore	Yes	Yes		Yes	TO	SL 2x TO	2x TO				SH	Yes			Yes			W	G
Tumult	Yes	Yes		Yes	SB	3x SB	TB				SH	Yes			Yes			B	G
Vigilant	Yes	Yes		Yes	TO	SL 2x TO	TB	Yes			T	Yes		Yes		M	Yes	W	AS
Wrangler		Yes		Yes	TO	2x TO	TB		Yes		T	Yes		Yes			Yes	W	AS
Zealous	Yes			Yes	TO	SL 2x TO	TB	Yes			T	Yes					Yes	B	43
Drawing Number	1, 7, 22	19	27	23, 24, 25	23B, 8, 9, 23A	10, 11, 12	13	14	30	1, 15	12	10	1	12	0.1 16	5	—	—	

Key: SO: Single Oerlikon; TO: Twin Oerlikon; SB: Single Bofors; QP: Quad Pom-Pom; SL: Searchlight; TB: Twin Bofors; SH: Short; T: Tall; A: Aft; M: On Foremast; B: Black; W: White; AS: Admiralty Standard; 43: Post-1943; WA: Western Approaches; G: Plain Light Grey.

Note: (1) *Wrangler* dual purpose director shown on drawing 2.

(2) *Zealous* power-operated director shown on drawing 20; located as in *Wrangler*.

(3) No significant variants in 'U' Class.

and cemented between the moulded straps abaft the centre of rotation. As an additional refinement, cement a small strip of plastic across the tubes near the cupola to represent the servicing platform.

All the close-range gun decks are protected by slinter shields (made from thin paper in the model) and similar shields are fitted alongside the 4.7 inch guns. Notice that the splinter shields for twin Oerlikons are of reduced height outboard, to allow the guns to be fully depressed.

Torpedo davits and Carley Floats come from the spare part box, and a good deal of plastic sprue needs to be chopped up to make bollards, searchlights and so on.

Make the DC throwers from sprue too, slicing it diagonally so that the thrower leans outwards. By each thrower are six ready-use depth charges, arranged three high and two deep, as shown in the drawing. On the quarter-deck there are double rows of six depth charges and two dan buoys. The short ensign staff is offset to starboard clear of the depth charge rails.

Boats and davits again come from the spare part box. New holes need to be made in the deck to receive them, of course, and as already described, I set my 25 ft motor boat in the outboard position.

Make up the two 'Charlie Noble' galley funnels, cranking the forward one to lead it towards the mast structure. A number of lockers and fan trunks are positioned generally around the upper decks, all made from scrap.

HMS *Rocket* had a short lattice structure amidships, carrying the early type of Surface Warning Radar, with a searchlight platform immediately abaft it. The lattice is made from sprue, and is topped by a small platform for the aerial, while the searchlight and its platform are made from scrap.

From the 'V' class onwards, catwalks were provided linking the fo'c'sle deck with the after superstructure. These were narrow gangways with guardrails on each side, and are shown dotted in the drawing. They gave a means of getting aft along the main deck when the latter was awash in rough weather.

Mount the propeller shafts, screws and rudder conventionally. The small recesses applicable to the *Cossack* hull will be in the wrong place, once its length has been altered so new ones need to be cut to accept the shafts, and the originals filled with modelling putty, sanded smooth.

### CAMOUFLAGE

All the ships dealt with saw War Service, first in the Home Fleet and later in the Far East, where they went more or less en bloc. There were three main camouflage schemes:

*Western Approaches:* Long stripes of white, green, and light blue, with objects in shade painted white.

*Admiralty Standard:* This was similar, but the colours were brown, grey, and dark blue. Both schemes were in use on Home and foreign stations at the same time, although some ships in the Home Fleet were overall dark grey.

*Post-1943:* All ships were light grey with a dark blue band from the waterline to maindeck level, extending roughly between 'A' and 'Y' guns, but sometimes from stem to stern.

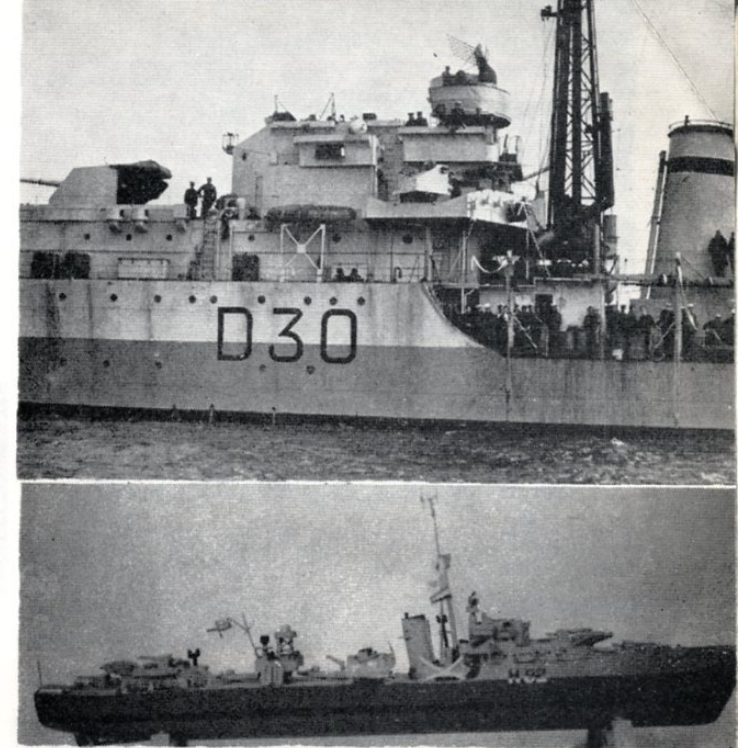
HMS *Rocket* had the post-1943 scheme, and I achieved a dead straight line at the colour boundary by first painting the entire hull above the waterline grey. Then, a thin strip of Sellotape was stuck on the ship's side leading forward at maindeck level as far as the bow. The lower part of the hull was then painted blue, and when all was dry, the Sellotape was carefully peeled off, leaving a sharp edge.

### FUNNEL MARKINGS

Flotilla Leaders were distinguished by having a black band around the top of the funnel, 2 mm deep in 1:600 scale. They did not show their pendant number on the side or stern. The flotilla marking was also carried on the funnel, in the form of bands of red, white, or black, or a combination of these. The allocations were complex and varied from theatre to theatre, but in any case they were abandoned to a large extent towards the end of the war, so the modeller of the ships listed need not be bothered by them.

After the war, the complicated scheme of flotilla funnel bands was changed in favour of the simple expedient of a number painted on the funnel—a method which still survives. In addition, nowadays, warships often have a symbolic device on the funnel, too. HMS *Glamorgan*, for example, wears the Red Dragon of Wales, while HMS *Kent* displays the White Horse of her County.

December, 1969



Top: A superb detail view of HMS *Wager*, 27th Destroyer Flotilla, British Pacific Fleet, in 1945. Note the red/yellow Carley float, the single small director with superimposed radar aerial, twin Oerlikon mount in bridge wing, and later type of shield to 4.7 inch gun (E. W. Elwick). Above: HMS *Rocket* modelled by Peter Hodges as described in the text.

### PENDANT NUMBERS

The complete list of wartime pendant numbers appears in the Class List, and I have also indicated the appropriate colour in the Equipment Table. As will be seen from the model of HMS *Rocket*, her number changed colour so that it contrasted against the camouflage band. I used transfers, later painting over the black letters with white paint.

### PAINTING SCHEME

Contrast is the thing to aim for to give the best effect. The table gives the correct camouflage for the main hull and superstructure and the following is an average scheme for decks and fittings:

*Black:* Boot-topping (1.5 mm strip of Sellotape, painted, cut and stuck on the hull when painting is complete); pom-pom gun body and barrels; Oerlikon guns and magazines; lattice masts below yardarm level; rangefinder 'arms'; searchlights; galley funnels; inside main funnel.

*Light Grey:* Deck fittings and boats; 4.7 inch gunshields and barrels; Oerlikon shields; hull and superstructure in conjunction with camouflage scheme; main deck from break of fo'c'sle to after superstructure; fo'c'sle gear.

*Dull red:* Fo'c'sle to breakwater; hull beneath boot-topping; quarter-deck abaft after superstructure.

*Dark Green:* Fo'c'sle deck abaft breakwater; all gun decks; main deck abreast after superstructure; torpedo tube servicing platforms.

*Light Brown:* Decks of boats; breech worker's platform on 4.7 inch guns; bridge deck; Warning Radar 'lantern'; jackstaff and ensign staff.

*White:* Upper masts; motor boat canopies; all boats below their waterline; later style Surface Warning radar aerial.

*Silver:* Muzzles of 4.7 inch guns.

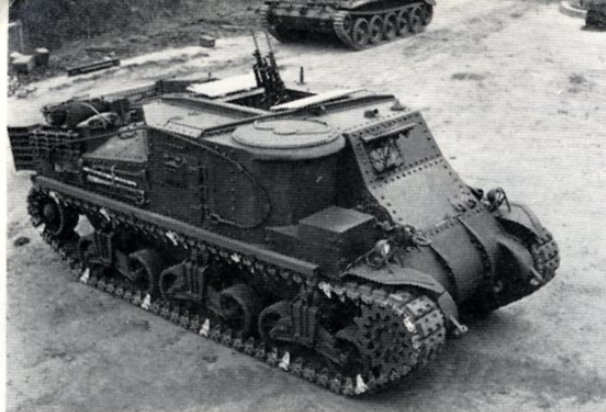
*Bronze:* Propellers. (On no account should anchors ever be painted bronze!)

### FINAL DETAILS

Using gloss paints, put a touch of red and green on the wind deflectors of the bridge signal-search sponsons to port and starboard to depict the navigation lamp shields, and similarly paint the tops of the port and starboard cable holders.

Continued on page 195





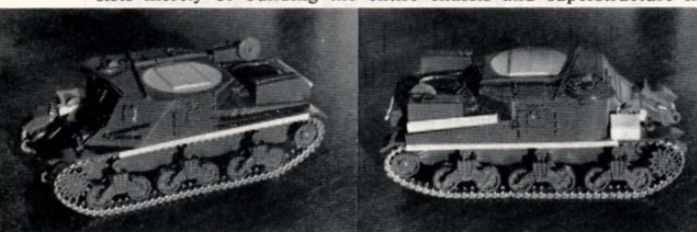
# GRANT ARVs

HAVING dealt last month with the US Army version of a recovery vehicle based on the M3 Medium chassis, it only remains this month to cover the other ARV variants possible from this kit. Both are reasonably easy, and the British Grant ARV conversion is one of the easiest there is and ideal for a beginner to military modelling.

## GRANT ARV

This British conversion was based on obsolete Grant tanks which had been replaced in service by Shermans. The turret was removed and a winch was fitted inside the fighting compartment. The Grant ARV was in service from late 1943 onwards. It was in line with other 'Mk I standard' ARV's of the period and had no jib but carried a demountable A frame jib which could be erected on lugs at the front or rear. There were many detail differences between individual vehicles with respect to small fitting.

The model is extremely simple and the first part of the work consists merely of building the entire chassis and superstructure in



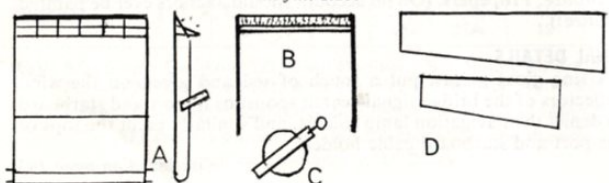
Above: Left and right views of the Grant ARV model before painting; note A Frame arms stowed on hull sides.

accordance with the kit instructions, omitting the 75 mm gun and mount completely. The aperture for the 75 mm gun is then covered over with a 10 mm x 7 mm rectangle of stiff paper to represent the welded plate on the real thing. Curve this before cementing to follow the line of the barbette.

On the mudguard immediately ahead of the barbette goes a 7 mm x 7 mm x 3 mm (deep) square toolbox. I used a bit of spare plastic petrol pump from a service station kit for this. In some vehicles, such as that in the heading picture, the box was curved to fit against the barbette; in others it was square. Some vehicles also had a built-up extension, again as shown in the heading, while others didn't. I chose the simpler arrangement. Between the toolbox and the hull front was stowed the main snatch block for recovery work and this can be made from scrap using the drawing as a guide.

On the hull top, first file off the sighting block above the 75 mm gun barbette and then cut out a disc of thick paper and cement it to the left side of the roof to depict the plate covering the turret ring. I found that this disc exactly matched the diameter of a sixpence so

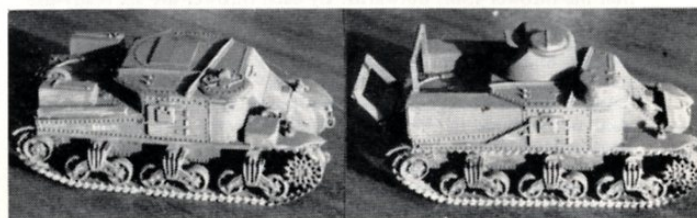
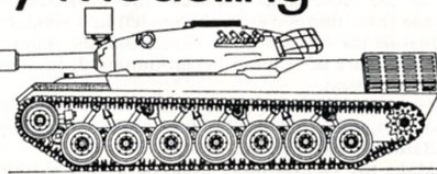
Full-size drawings show (A) earth spade front and side views, (B) roller and support from rear, (C) snatch block, (D) sides for stowage boxes, all full-size.



## Military Modelling

by

Chris Ellis



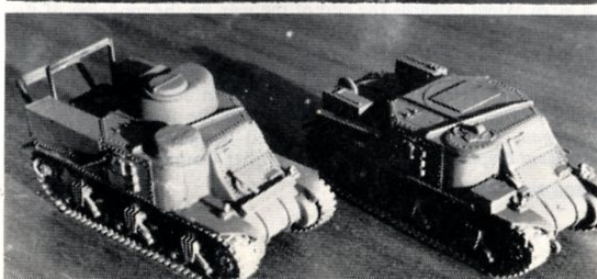
Above, left: Completed Grant ARV (with the sight still to be removed from the 75 mm barbette). Above, right: Completed model of the Australian Grant ARV. Heading: Grant ARV fully stowed and equipped (Imperial War Museum).

it's a very simple matter to mark and cut it to size. A hatchway 14 mm x 8 mm is needed and this can be cut from plastic card, scored across the middle to depict the flaps, and cemented centrally on the turret ring disc. If you want to make the model with the flaps open, you must first mark out an aperture the size of the hatch, drill out the four corners (well inside) and join up the holes with a model knife to remove the unwanted plastic. Then file the aperture to neaten it up to size. The flaps are then cut in two halves and cemented as in the heading picture. With the flaps open a twin Bren AA mounting was usually affixed on a pintle to the right inner corner of the hatchway (again as shown) and in model form this can be made from pins or stretched sprue and plastic card. My model shows the simple way out, however, with the hatches closed though I did once make a Sherman ARV Mk I fitted as described with open hatches.

All that now remains are the ARV fittings. First of all add tiny attachment lugs for the jib to the front transmission humps—clearly seen in the model pictures—and add similar lugs on the hull rear just below the exhaust pipes. The two arms for the A Frame jib were carried on brackets each side on the lower hull and I used 50 mm lengths of Microstrip for these, choosing the thickest 1.5 mm-wide pieces available. Detail on the hull rear can include coiled wire, tow chains, a couple of spare bogie wheels, timber baulks either across the rear or alongside the stowage boxes (as on my model), and items like axes and picks. Some, but not all, vehicles carried a rack each side above the rear mudguard and fitting into the cut-away of the

Continued on page 195

Below: Australian Grant ARV before painting, showing plastic card parts in white. Bottom: The two models complete.



## Carrier Story— from page 171

**Carrier, 3 inch Mortar, No 2, Mk I:** As for No 1, Mk I, but with a Ford V-8, 85 bhp GAE engine and built in America.

**Carrier, 3 inch Mortar, No 2A, Mk I:** As for No 1, Mk I but with a Ford V-8, 85 bhp GAEA engine and built in America.

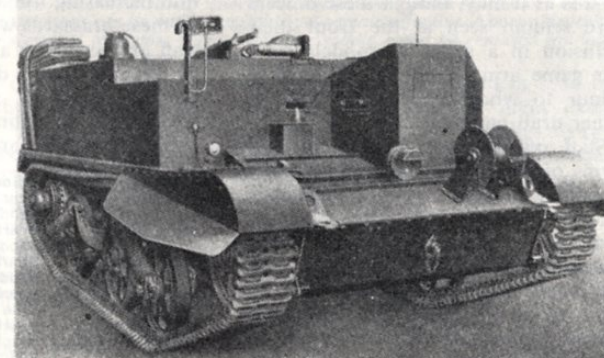
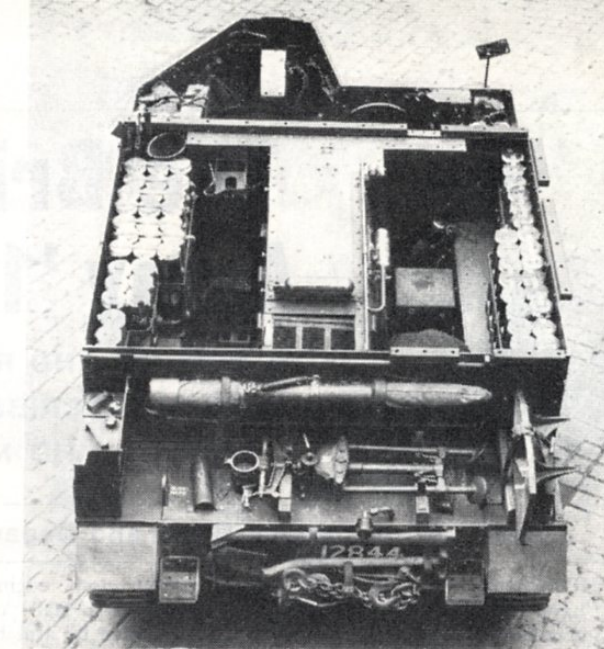
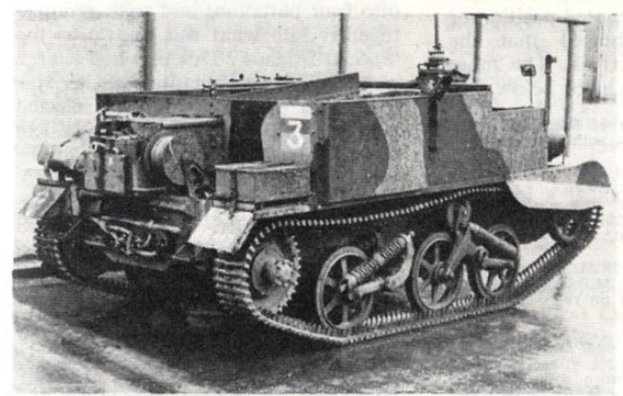
**Carrier, 3 inch Mortar, No 3, Mk I\*:** As for No 1, Mk I but with a Ford V-8 85 bhp engine and built in Canada.

**Carrier, 3 inch Mortar, No 1, Mk II:** Basically a Carrier Universal Mk II adapted for the mortar role, this version carried the same crew as the Mark I but no spare wheel was fitted and the tow rope was now carried at the front. Footsteps were added to the sides of the vehicle and were the main distinguishing feature of this mark.

**Carrier, 3 inch Mortar, No 2, Mk II:** As for No 1, Mk II, but with a Ford V-8 85 bhp GAE engine and built in America.

**Carrier, 3 inch Mortar, No 2A, Mk II:** As for No 1, Mk II, but with a Ford V-8 85 bhp GAEA engine and built in America.

**Carrier, 3 inch Mortar, No 3, Mk II\*:** As for No 1, Mk II, but with a Ford V-8 85 bhp engine and built in Canada.



Top: The Carrier 3 inch Mortar, No 1 Mk I, showing the complete stowage for mortar and ammunition. Above: Carrier AOP, No 1 Mk IIIw was an all-welded vehicle. Left: Carrier AOP, No 1 Mk II showing standard rear fittings.

## Captain Brown's Camel—from page 172

craft carries no decoration at all and the white of its upper wing roundels is blackened. In between the squadron marking there is a roundel and serials are visible on the rear fuselage and rudder. This does not show any particular markings but does at least confirm the fact that 209 did carry roundels and serials sometimes.

Simpson was one of the better war artists. In fact, before he ever started to paint an aircraft he would go along to a squadron which had that particular aircraft and chat with the pilots. He would then paint his picture using actual aircraft subjects. One only has to see one of his paintings to know why he is considered by many to be the finest artist to date.

Unfortunately his painting of Brown's Camel seems to have become lost, but a photograph does survive. It depicts a Fokker DR1, the rear and top fuselage of which is red, all else streaky green and wearing the Balkan Kruez. It is diving and is in turn being dived upon by a Camel with the number B7270 in white on the fuselage. As before the metal panels and wheel shields are red or maroon, as is the chevron. This is shown in drawing 5 and 4A.

In a series of letters written during 1936 Capt Brown, after a cautionary warning that he had difficulty in remembering, stated that B7270 had a maroon cowl, metal panels and wheel shields. A maroon chevron, wider than before, was applied to the upper wing. The same style of chevron was also applied to the fuselage upper decking on the side of which the roundel was enclosed by the squadron marking. The aircraft serial number was painted in two

lines on the rudder and in a box on the rear fuselage. This is shown in drawing 6 and 6A.

So far only facts have been forwarded and no conclusions drawn. Some will now be made. It has been said that the Canadian photos show Brown standing in front of an aircraft, merely because the photographer did not want to drag his camera about. This is unlikely since pilots liked to be photographed with their own aircraft, not 'B' of 'A' flight! And if further proof is needed it is found in many photos of individuals of the same squadron all in different aircraft. Therefore the Canadian photos probably do show Brown at an indeterminate date.

Simpson's painting shows a Camel perfect to the last detail. The open-minded way in which he went into the matter is evident by the way he does not paint the Fokker all red. It is thought that on this occasion he visited the squadron to talk with its members and painted B7270 as it actually was at the time. Capt Brown's descriptions of B7270 were written without photographic reference many years later. Apart from the style of serials the only difference is the fuselage chevron. Capt Brown could have thought this was carried by B7270 but photo evidence does not bear this out. Alternatively this could have been carried by another aircraft, Capt Brown mistaking the serials. Simpson's version is, however, probably the best bet. He painted exactly what was there and, it is obvious, made every effort to put authentic markings on his aircraft. Hence my choice of the scheme in drawing 5 as the most authentic.





# The British Army '14-18

UNIFORMS AND REGIMENTS DESCRIBED  
BY DAVID NASH

## Part 6: Staff, Service Corps and Departments

THE General Staff of the Great War have been a target for accusations of incompetence and error ever since. Be this as it may, though these officers were seldom seen at the front their inclusion in a series of models or a war game army does add a touch of colour to what is, on the whole, a rather drab period.

Staff officers were dressed in uniforms of the officers' patterns already described. There was a tendency amongst them to wear riding breeches and, of course, they were always immaculately turned out. Many officers attached to the staff continued to wear their old corps or regimental uniforms. General officers were, however, distinguished by a scarlet cap band on the front of which was a gold or bronze badge, they also wore scarlet gorget patches with a thin line of golden oak leaves running down the centre. Staff officers below general rank wore these patches without the oak leaves. Surgeon Generals had black 'tabs'. Officers attached to the staff also wore blue and green cap bands and tabs.

The regulations on this point are complex but broadly speaking blue was worn by the Assistant Directors of the various staff departments and green by recruiting, instructional and intelligence officers. Staff greatcoats had shoulder straps with a ½ inch of

scarlet cloth edging the sides and point. All staff officers were distinguished by arm bands, which came into increasing use after 1915. The use of these brassards was not restricted to staff appointments and they were worn by all ranks; some denoted position or authority, others showed that the wearer had a distinct job. The more common of these are listed below.

Position	Colour of Brassard
GHQ	Scarlet with blue centre band
Army Staff	Scarlet with black centre band*
Corps Staff	Scarlet with white centre band*
Divisional Staff	Scarlet*
Brigade Staff	Blue*
Provost Marshal	Black 'P.M.' on red
Military Police	Black 'M.P.' on white or yellow on red
Runners	Scarlet
Guides	Green
RE Signals	White over blue

\* Staff Brassards often worn with formation badge sewn on, especially at Divisional level.

### Royal Engineers

The work of the Royal Engineers was reflected by the variety of different types of units which went to form the corps. The main units of the corps are listed below with their numbers as of August 1914 and August 1918, which gives some idea of the growth achieved during the Great War.

1914		1918
15	Field Companies	231
—	Army Signals Coys	24

7	Div Signals Coys	70
26	Fortress Coys	37
—	Army Troop Coys	67
—	Tunnelling Coys	25
—	Searchlight Sections	70
—	Gas Companies	16

The above represents only a small part of the establishment of units. The RE also had control of bridging and pontoon trains, survey, water supply, meteorology, drainage, electrical engineering, camouflage and had many minor functions besides.

In 1914 the Engineers were dressed in a similar style to the infantry, bearing in mind that all drivers of horse transport adopted the cavalry fashion. The tunic had gilding die struck buttons, the shoulder titles were the initials 'RE' in brass. The cap badge was bronze. Officers wore on their lapels a small flaming grenade above a scroll bearing the word 'UBIQUE'. All signal men wore the arm band noted above.

The 16 gas companies were formed into four battalions and were grouped together into what was known as the 'Special Brigade'. This unit had charge of offensive gas operations. Gas was carried in metal cylinders to selected points in the front line. The containers were emplaced and when conditions were favourable the gas was released, the wind carrying it to the German trenches. The RE also administered the Gas Schools, establishments at which ordinary soldiers were schooled in the most recent trends in anti-gas technology. At the battle of Loos in 1915, and maybe on other occasions, the Special Brigade wore an armband composed of vertical red, green and white oblongs each 1½ inches wide.

The tunnelling companies were an unconventional by-product of trench warfare. Their object was to drive underground tunnels directly beneath the German trenches, there they placed large explosive charges which were electrically detonated, usually in co-ordination with an infantry attack. The most spectacular exploit of the tunnellers was the Messines operation of 1917 when 19 mines, containing close on a million pounds of Amatol,

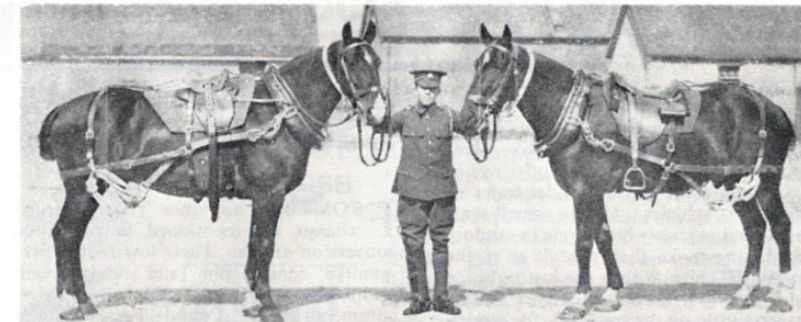
were fired. The result was to shatter the German defenders and to allow the infantry to take the ridge with ridiculous ease. German losses from these huge explosions have been estimated as high as 10,000 men, the number of soldiers reported missing after the battle.

### Army Service Corps

The Army Service Corps was responsible for the transport of all war-like stores to the fighting line. Each division was allocated a transport company, but a very large part of the wartime establishment was to be found at a higher level, behind the front at railheads, docks and, indeed, along all the arteries of supply to the whole army. In 1914 the ASC was overwhelmingly geared to horse transport and the soldiers were trained, drilled and clothed in the cavalry style. There were, however, a small number of motor transport units in existence, the quantity of which increased enormously during the war. By the armistice the ASC had some 26,000 motor vehicles under its control.

Horse transport consisted of a great assortment of Wagons GS (General Service) Marks II, III, IV, VII, VIII, IX and X; wagons limbered GS; bread and meat wagons, carts, forges; Ambulances Marks IV to VI, light ambulances, ambulance carts and water tanks. The Wagon GS Mark X had a body 9 ft 1½ inches long, 3 ft 2 inches wide and 1 ft 4 inches deep. The fore wheels were 3 ft 9 inches in diameter, the hind 4 ft 8 inches; width between wheels was 5 ft 2 inches and it weighed just over 15 cwt.

The ambulance Mk VI weighed just over 23 cwt. It was 6 ft in the track and its total length, including pole, was 23 ft 1 inch. The wheels were the same as on the Wagon GS Mk X. This vehicle was designed to take four



Top: Signaller with blue/white flags and correct armbands, painted up from 1914 figure with added pack and gas respirator; staff officer in greatcoat with arm and cap bands from German officer with British head; Light Ambulance Wagon Mk I (with furred hood) made from plastic card and US Civil War artillery wheels and horses using plans reproduced here—in this small scale the structure can be much simplified yet remain effective. Above: Nearside and offside horses in standard transport wagon harness; saddle could be removed for long rein driving.

wounded soldiers on stretchers, 12 sitting, or six sitting and two on stretchers.

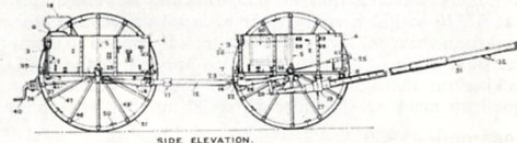
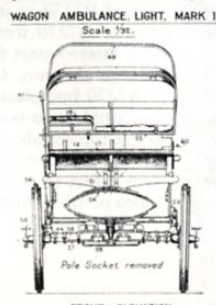
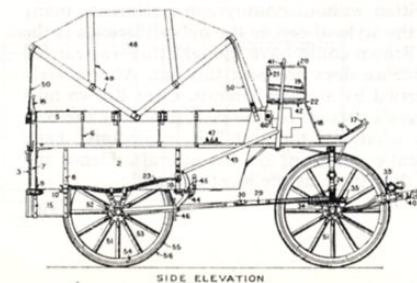
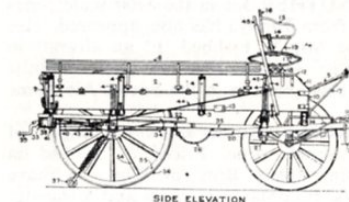
The Wagon Limbered GS was used in large quantities. The MG companies as noted in last month's AIRFIX magazine were major users. It measured 4 ft long by 3 ft 4 inches wide by 1 ft 4 inches deep. The wheels were 4 ft 8 inches diameter.

Other departmental corps included the Army Ordnance Corps, Royal Army Medical Corps, Army Veterinary Corps, Corps of Military Police and the Army Pay Corps.

These corps were uniformed in the khaki service dress already described, with gilding die struck buttons. The military police wore, in addition, the arm bands noted above and red cloth covers to their caps. The RAMC wore a small white disc with a red cross on both upper arms. The well-known red

cross arm band was worn in 1914 but did not persist to any great extent thereafter; 2nd class orderlies wore a thin red band around the cuff. Certain RAMC units continued to wear old equipment dating from the South African War.

Below: Side view of General Service Wagon Mk X reproduced from ASC Manual. Figures refer to component parts on separate list, not reproduced. 37 is the roller scotch and 45 the brake lever. Dimensions given in text enable this drawing to be used as a basis for scratch-built model from plastic card and suitable wheels.



Right: Side view of Limbered Wagon, GS, (dimensions given in text). Left: Side and front views of Light Ambulance Wagon Mk I, reduced to 1:76 scale, all from ASC Manual (Courtesy Imperial War Museum).

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December, 1969

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# NEW

## KITS AND MODELS

### NEW BY VIKING

FROM C. F. Tredgold, 7 Kings Drive, Littleover, Derby, we have had samples of some of the latest offerings in the German-made Viking model series of 1:86 scale vehicles. Unlike small-scale British road models which come in random sizes, Viking make their models all to the common HO size so they are just right for model railways, though strictly speaking they are a little on the small side for modelers working in the British 1:76 (OO) scale. The larger vehicles, however, are quite passable in this scale. Prices are very modest for the excellent quality offered. Among the samples we had were a superb Mercedes refrigerator van with opening rear doors (9s 11d), an Airfield Fire Engine (5s 8d)—ideal for anyone seeking a modern item for an airport scene—the NSU Ro 80 car (2s 7d), the VW 411 (2s 7d), a VW Pick-up truck (2s 7d) and a Mercedes 2223 truck (7s 3d). All are fully coloured and impeccably finished; even the chassis parts which you can't normally see are included. All can be had by mail order (allow 1s to 3s postage in UK or 6s overseas) from C. F. Tredgold. A free illustrated catalogue is also available from Tredgold on receipt of a 4d stamp or large SAE. It is worth having as there are some useful models in the large Viking range. C.O.E.

### SOVIET FIGHTER

ANOTHER kit in the 1:00 scale series from Tamiya has now appeared. This is the Mig-21 Fishbed 'F' an aircraft in quantity service with many Communist air arms apart from the Soviet Air Force itself.

This, like the other kits in the range is of exceptional value. Priced at 5s 11d in Britain, Jones Bros of Chiswick have stocks. It contains 33 parts and a transfer sheet of Soviet, North Vietnam and Polish insignia. The detailing is not too heavy and parts such as undercarriage legs and wheel covers are delightfully thin and very nearly scale size.

The Fishbed is easy to make up and an ideal kit for a beginner to start work on. Weights will be needed in the nose if the model is to stand on its undercarriage. The outline appears to be accurate, though on this aspect all Soviet aircraft models have to be assessed on available information in the Western world.

In making up the model we noted that there was a complete absence of flash. It went together well though the use of tweezers is recommended for some of the smaller parts. The model maker will have to exercise great care in getting the undercarriage doors on as these are very thin

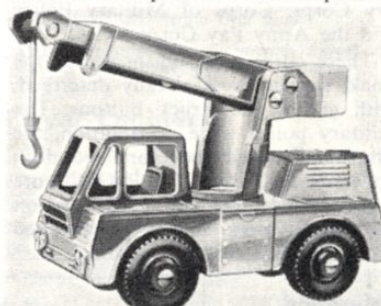
and too much cement can make an ugly impression on the finish, apart from warping the part being assembled. A.W.H.

### BRITANNIA CHASSIS

FROM time to time Triang-Hornby chassis are mentioned in motorised conversion articles. Their low cost, workmanlike construction and ready availability from all Triang-Hornby dealers commend them to modellers. We have received a sample of the *Britannia* chassis from Jones Bros of Chiswick which contains a number of notable features. The piston drive smoke unit is one obvious point to notice but the robust valve gear, see-through spoked wheels, solid cast metal frame and the tried and tested Triang 3-pole motor commend this chassis for conversion use for locomotives having 6 ft diameter coupled wheels and a six-coupled wheelbase of 6 ft 6 in + 6 ft 6 in or thereabouts. The price is £4 7s including the smoke unit. We have used it for the B1 conversion featured elsewhere in this issue. It will be seen that using this chassis allows you to build the B1 for well under £5. N.S.

### TWO FROM MIDORI

MIDORI, who are well-known as makers of a small range of 1:76 scale tanks, have now turned their attention to 1:40 scale and produced two inexpensive



Latest from Lesney in the Matchbox range is this Iron Fairey mobile crane which should be of use to a good many modellers. To 1:78 scale, this type of crane is used by British Railways and the RAF and also, we think, the Army may have some. For line-side or modern RAF scenes, however, this 2s 4d model can be snapped up and, given a suitable repaint, will make an authentic and useful model vehicle to have by. Lesney have also released three cars in their new Superfast series with very free-running properties. Beautifully detailed, they are the Pininfarina BMC 1800, Lamborghini Marzal, and Lotus Europa, the Lotus and 1800 having opening doors. Best yet from Lesney they are all to about 1:64 scale and cost 2s 4d each.

but attractive clockwork-powered kits. These are for a Hornet with Malkara missiles, and the Saladin, both British types. In general they have succeeded very well, though the Hornet is a much better model than the Saladin. Without checking angles (which certainly *look* right), the Hornet is a very accurate little model and has the added attraction of spring loaded Malkara missiles which will actually 'fire' in a most realistic way. Assembly is very simple and there are no complicated parts or gimmicks other than the working missiles. The wheels and tyres are particularly good. The ingenious horizontal clockwork mechanism



ism is ready geared and assembled and just fits into the chassis, which has a keyhole in the underside. This is an ideal model for beginners in the larger scale, and we found it, in fact, to be about 1:35 scale, despite Midori's claim of 1:40.

The Saladin is less successful mainly because it has been simplified a little round the chassis and looks a little bare. Also the turret appears to be too slender. Nonetheless it captures the Saladin 'look' rather more successfully, in our view, than the old Tamiya model. Plastic axles are provided for the front two pairs of wheels and these are something of a let-down since running, in consequence, is far from smooth. The rear (metal) axle and mechanism are the same as in the Hornet kit, however. Each kit costs 10s 6d and is available from Jones Bros of Chiswick who supplied our samples. Postage is extra. C.O.E.

### WAGON BOGIES

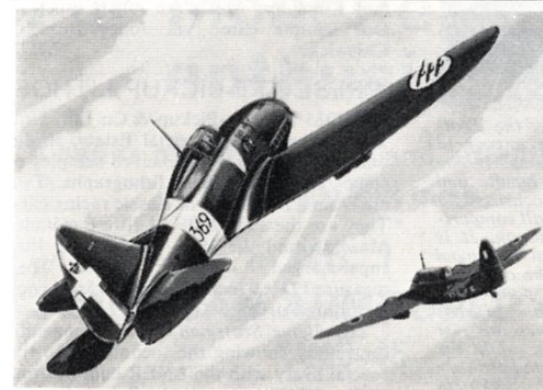
KITS of parts for modelling goods wagon bogies of the diamond frame and GWR plate type as supplied in the Ratio Caledonian Bogie Ore and GWR Bogie Bolster wagons (reviewed in the September issue) are now available separately. The bogie kits include wheels and couplings of the Triang type and they incorporate a number of very notable features. They are cleanly and accurately moulded in black plastic so no painting is required. The spoked wheels are moulded in one piece and they revolve freely without any trace of wobble on their pointed bearings. The stretchers and side frames fit together with such precision that they can be assembled

Continued on page 190

AIRFIX magazine

# MODEL TOYS

PLASTIC KIT SPECIALISTS—ASSOCIATE MEMBER I.P.M.S.



ITALAEREI  
1:72

REGGIANE  
RE 2001

### ITALAEREI AIRCRAFT KITS

The Reggiane RE-2001 is the second release in what was previously known as the Aliplast range, the range name having been changed to Italaerei to avoid confusion with other makes of kit. As with the earlier released Fiat G-55, which is also in stock, and also in 1/72 scale, this new release makes into a splendid model of a machine hitherto unobtainable in this scale, and fills another gap in WWII Italian military aircraft. Kit has over 40 pieces, with fine detailing much as with the G-55, undercarriage is again done particularly well. Decals, which are matt, offer two alternative finishes, both for machines of the Regia Aeronautica.

Prices: REGGIANE RE-2001 11/9  
FIAT G-55 CENTAURO 11/9

## MODELDECALS

### Sheet No. 1 1/72 scale

Six alternative finishes for the BAC Lightning in RAF service.

F. Mk. 2	XN790	"E"	92 Sqn.
F. Mk. 2	XN778	"F"	19 Sqn.
F. Mk. 6	XR764	"L"	5 Sqn.
F. Mk. 6	X5937	"C"	23 Sqn.
F. Mk. 6	X5921	"M"	74 Sqn.
F. Mk. 1A	XM175	"E"	56 Sqn.

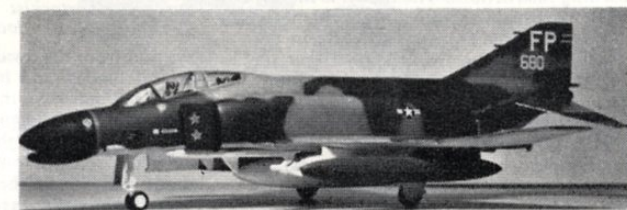
Also revised fin emblem for Airfix kit of F. Mk. 1A XM192 "K" 111 Sqn.

PRICES: Modeldecals No. 1 7/6  
Modeldecals No. 2 5/3

### Sheet No. 2 1/72 scale

Three alternative finishes for the McDonnell Phantom. F.4B, VMFA-531 U.S.M.C. 1968; F.4C, 555th TFS, 8th TFW, USAF 1967, as flown by Col. (now Brig-General) Robin Olds; FG.1, 767 Sqn, F.A.A., 1969. Note: National insignia is given on this sheet for each of the U.S. machines. Illustrated instruction sheet giving decal application, and colour finishing details, is packed with each sheet.

Postage on all decals: up to 3 sheets 6d., 4 and over 9d. (UK).



Above: Airfix kit made up as Col. Robin Olds machine, using decals from Modeldecals sheet No. 2. Model by Richard L. Ward of Modeldecals.

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### FROG

All 1/72 scale kits re-issued in recent months with new decals, available from stock, all at 3/-

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Sabre Mk. 6	1/72	4/3
B. Blenheim I or IF	1/72	6/-
JU-88A.4	1/72	6/-
BAC Lightning 6	1/72	7/6
F4K/M Phantom	1/72	7/6
Saab AJ-37 Viggen	1/72	7/6
G.OV-1B Mohawk	1/72	7/6
F-105D Thunderchief	1/72	7/6
H8K2 Emily F. Boat	1/72	32/6
B.B.47E Stratojet	1/72	49/6

### IMC

Mig 21D All Weather	1/72	16/6
RF-4B Phantom	1/72	16/6
A-4E Skyhawk	1/72	16/6

### AURORA

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All currently available Aurora WWI aircraft in stock	1/48	15/-

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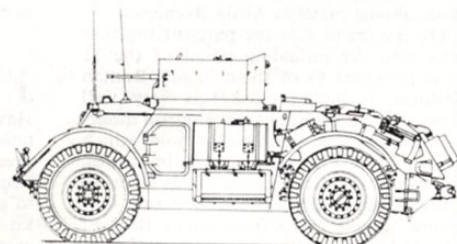
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## New Kits—continued

dry and a wash of liquid cement is all that is required to keep them together. The bogie pin snaps and locks into the bolster without the aid of cement and the bolster is ingeniously pivoted to allow for undulations in the track. They are delightfully foolproof models and excellent value for 7s 6d per kit. Jones Bros of Chiswick can supply. We hope to incorporate one or more of these bogie kits in some later Basic Railway Modelling articles. N.S.

## GERMAN HALF-TRACK

**L**ATEST in Nitto's growing range of 1:35 scale AFVs is a kit for the Sd Kfz 251/1 Hanomag half-track, the standard Wehrmacht semi-track of World War 2. This splendid model is admirable in every way, and sets very high standards. In addition to being extremely well moulded and accurate, the instruction sheet is a model of what an instruction sheet should be, the transfers are excellent and offer plenty of alternatives, and there are detailed colouring and marking instructions. The model is motorised in the usual way with a Mabuchi motor and drive to the front sprocket as in the actual vehicle. The front wheels steer on stub axles and assembly is absolutely straightforward. In short, this is a 'must' for 1:35 scale fans. It also has many conversion possibilities. Jones Bros supplied our sample which costs 25s 11d, postage extra. As we go to press, Jones Bros tell us this kit is out of stock and may not be available for some weeks. C.O.E.

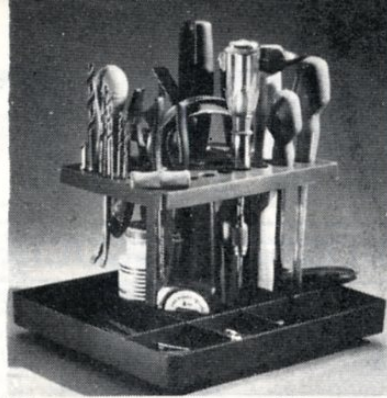
## ANCIENT ROMAN SHIP

**W**E have recently been examining the Aurora kit of a Roman bireme (a warship powered by two rows of oars each side), which must surely hold the record as the oldest type of historic ship in any kit list. The detail is good, though on one or two points the instructions are not too clear, notably about installation of the rudder handles and rudders which need a little thought and trial before any cement is used. One other thing we did not much care for is the unnecessarily ornate stand, consisting of a pair of winged lions holding a nameplate framed in writhing serpents! We think it would look much neater replaced by a plain stand built up from scrap. Scale almost matches Airfix Romans.

On the credit side the parts fit together well, and the moulding detail of the 11 crew members (9 of them in full Roman uniform, including cloaks) is very well done. A most unusual and colourful model this, though specialised to the point which we would have thought would limit sales, and in this respect the price of 35s seems to reflect a rather small production run. Our review sample came from Jones Bros of Chiswick. N.C.L.H.

## USEFUL ITEMS

**I**N the days before specialist craft knives were so plentiful, keen modellers used surgical scalpels when they could get them. Jones Bros of Chiswick are now stocking a



*This very useful new item is called the 'Tool-to-Hand' and may well be the answer to many modellers' storage problems. It has a central pylon with carrying handle and rack for stowing tools. The base consists of a revolving tray with numerous small compartments for screws, nails, and so on. It is intended for home handymen but we found that it is ideal for modellers. The compartments can hold spare parts, paint tins, cement tubes, etc., while tools and brushes fit in the top. Some of the holes are just right for holding fuselages, etc., while the cement dries. Price is 27s 6d from hardware and hobby shops. Write (with SAE) to Copydex Ltd, 1 Torquay St, London W2, for your nearest stockist if you can't see it locally.*

selection from the Swann Morton range of surgical blades, and handles specially for modellers, and have the medium size No 5 handle and the following scalpel blades: 10 (rounded), 10a (straight), 11 (pointed), 15 (stepped), 26 (extra long straight edge). The handle costs 5s and the blades are 5d each. Though these prices are a little higher than those for corresponding craft knives, the quality is, of course, very much higher. The handle is particularly well finished and nicely balanced and will certainly appeal to those who do a great deal of fine conversion and detail work.

Another useful item stocked by Jones Bros is Plastic Padding which is produced primarily for domestic repair work but can be used equally well for modelling since it can be painted, filed, sanded, etc. It dries in about 10 minutes, does not shrink, and can be worked on after an hour or so. For 8s 3d you get a set of two tubes, the padding itself, and the hardener, which are mixed following the instructions and then applied just as you would apply plastic wood or plastic putty. Very handy for conversion and filling work, it is well worth trying. C.O.E.

## HAWK MIG-15

**J**UST released by Hawk is a 1:48 scale replica of the MiG-15 finished in Hawk's well-known all-chrome style. The finish is superb and gives an excellent impression of a natural metal aircraft, particularly since the sheen varies from panel to panel in life-like fashion. However, the kit itself leaves a little to be desired. It is extremely simple—with fewer parts even than the Airfix MiG-15. This is not a bad thing in itself, but there is a complete absence of cockpit detail and the wings, which are each in one piece, were dimpled on our sample and were not a good fit on the fuselage locations. Points like this have

to be corrected, which means that the excellent chrome finish gets damaged in the process. Finally there is a complete absence of wheel wells. Though the transfers are excellent—two alternative sets of markings are given—the kit seems somewhat overpriced at 32s, particularly when contrasted with other Hawk offerings, like the Bearcat and Lysander, which are much superior. Our sample came via Jones Bros of Chiswick. C.E.O.

## PRESCOTT-PICKUP LITHOS

**F**ROM Prescott-Pickup & Co Ltd, Unit 7, Stanmore Industrial Estate, Bridgworth, Salop, we have received samples of some of their excellent lithographs. Two are from a new series of classic racing cars. They are the 1957 250F 2½ litre 6 cylinder Maserati and the 1934 Type 59 3.3 litre supercharged 8 cylinder Bugatti. They measure 12½ x 9 inches and cost 15s 6d each including Purchase Tax.

The Flying Scotsman litho is a magnificent study showing the locomotive in the special livery with the LNER coat of arms on the cabside worn at the British Empire Exhibition at Wembley in 1924. This print measures 22 x 15 inches and costs 37s 6d including purchase tax. Special signed and numbered artists proofs are also available at 52s 6d each. N.S.

## FREIGHTLINER WAGON

**F**ROM Jones Bros of Chiswick we have received samples of the latest Triang Hornby bogie Freightliner wagon which comes complete with two containers price 17s 6d. The overall length is approximately 10 inches and each container is 4½ inches long. The wagon is moulded in rail-blue plastic with correct type black bogies. The containers moulded in grey plastic have opening doors at one end and are decorated with printed paper symbols indicating the owning company's insignia. Pegs on the wagon floor engage in holes in the base of the containers to anchor them in place. The model is free running and realistic and just the thing for 'modern image' railway modellers. N.S.

## NEW TRANSFERS

**F**ROM Modeltoys of Portsmouth we've had samples of the latest in the Modeldecals series which is a sheet of transfers for Phantoms. To 1:72 scale, three sets of markings are given, a USMC F-4B, the F-4C flown in Vietnam by USAF 'ace' Colonel Robert Olds, and a British aircraft of 767 Sqn, FAA. The latter markings are for the Frog kit and the others for the Airfix or Revell kits. Very well presented, and neatly printed, the transfers come with an excellent reference sheet which features detailed camouflage drawings and historical notes. Price is 5s 3d the set, postage extra. C.O.E.

THREE small errors in last month's Sandringham feature: (1) The tail boomerang emblem is Royal Blue with yellow pattern and light green border. (2) 'Ansett' is red and other lettering black. (3) Interior view showed B cabin.

# ALMARKS PROUDLY PRESENT

## For Modellers and enthusiasts

A series of authoritative and attractive titles you must not miss

## No. 1 AMERICAN ARMoured CARS 1940-45

By Chris Ellis and Peter Chamberlain

THIS publication tells the story of the armoured cars produced in America in the years 1940-45, the only period of really concentrated development of this class of vehicle in the history of U.S. armoured forces. Divided broadly into two parts, Part 1 tells the overall development story, putting each project and prototype into perspective and illustrating most of the prototype vehicles, while Part 2 provides a more detailed description of each of the U.S. armoured car designs which was standardised or achieved production status. Scale drawings of the most important types are given to constant 1:48 and 1:76 scales and the opportunity is taken to give extensive picture coverage of value to modellers in particular but also, of course, of interest to all armour enthusiasts. The colour drawings by Kenneth M. Jones show marking schemes for specific vehicles.

Below: Staghound AA serving with the 1st Belgian Armoured Brigade Group in 1944. This particular vehicle also forms the subject for a multi-view colour illustration on the inside covers.



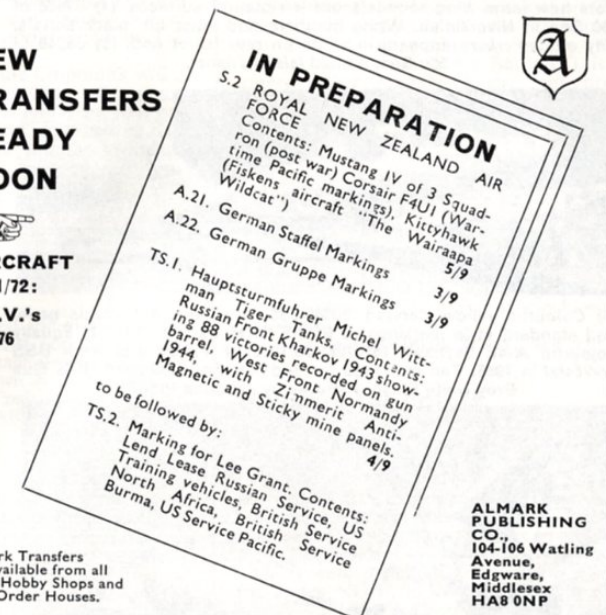
From your Bookshop or Almark stockist and all Hobby Mail Order Firms.

12/6

- ★ Printed on top quality heavy art paper
- ★ Size 9½" x 7½"
- ★ Four pages of full colour multi-view drawing depicting five vehicles
- ★ Five pages (total) of detailed multi-view scale line drawings
- ★ 1:48 scale with 1:76 reductions
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- ★ Full specifications

## NEW TRANSFERS READY SOON

**AIRCRAFT**  
1/72:  
A.F.V.'s  
1/76



Almark Transfers are available from all good Hobby Shops and Mail Order Houses.

ALMARK PUBLISHING CO., 104-106 Watling Avenue, Edgware, Middlesex HA8 0NP



## photoPAGE

More rare pictures from readers with captions by Michael J. F. Bowyer. A free Airfix kit is awarded for every picture published, but please note that there is usually a delay of some months before publication due to the limited space at our disposal.



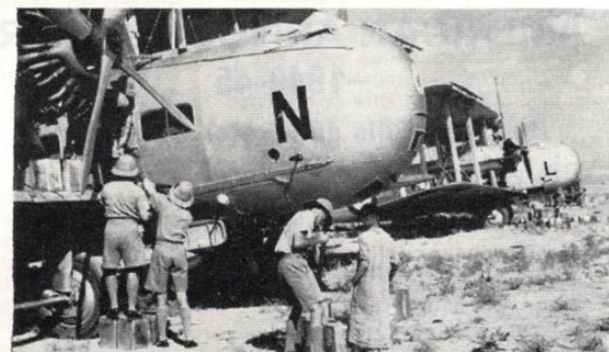
Following publication of the Valentia pictures in our October 1968 Photopage, reader R. G. Ledieu identifies the squadron (which we queried) as No 70 and sends some earlier pictures of the same aircraft in 1938, long before they were camouflaged. These show (1) K4630 after a forced landing in the desert with the crew and passengers standing by with the crew of a second Valentia (in which Mr Ledieu was second pilot) which had flown in a spare engine. This incident took place between Habbaniyah and Basrah.



More Virginia pictures here also illustrate this month's 'Bombing Colours'. They come from J. C. Strickland. (3) J6998 of 7 Sqn in silver finish with 7 in black aft. A small 7 appeared in a disc on the nose. Note how large wing roundels overlap control surfaces. (4) J7566 of 500 Sqn in Nivo finish. White numbers and letter aft, black serials. City of Canterbury appears in white on rear turret end. (5) J8240 of 500 Sqn, named Isle of Thanet.



(6) Colourful yellow Harvard, 20332:332 with black anti-dazzle panel and standard style markings at RCAF St Hubert in 1959. (7) Equally colourful A-4E Skyhawk 151072k/405/1072 of VA-81 was from USS Forrestal in 1965. Tail markings are red/black on standard USN Gull Grey/white finish. Pictures by Jacques Plouffe.



(2) Aircraft L and N of 70 Sqn being re-fuelled at the up-country landing strip near Suleimaniyah close to the Kurdistan border after flying in troops for a training exercise in September 1938.



(8) A captured Junkers Ju 188 at Fassberg in late 1945 where it was used for testing German bombs. Werke No 288832, it is coded UN plus some other letter or digit obscured by the RAF fuselage roundel. (9) Mixed markings on a captured Ju 352 transport at Lubeck in 1945. This type had a power-operated ramp which raised the tail as it opened. Coded C and lettered AIR MIN ?? it has both a swastika and RAF flash on the tail and a very small roundel over the under-wing cross. (10) Two of the last replacement Spitfire XIVs taken into service with 341 (Free French) Sqn at Fassberg prior to disbandment on November 15, 1945. Nearest is TG902: NL-Z. Note the D Type roundels with thin yellow outers. Pictures by E. C. Winch.



# Letters to the Editor

## Doping Pigments

IN PART 6 of Bombing Colours, Bruce Robertson refers to APD and APDT as aluminium pigmented dopes for temperate and tropical use respectively. Since clear (non-pigmented) dopes AD and ADT existed the letter A would refer to cellulose acetate as opposed to nitro-cellulose based dope.

The pigment in APD was mixed yellow ochre and carbon black, and in APDT red oxide of iron.

Formulation for cellulose acetate and nitro-cellulose based dopes are given in Jameson's Manufacturers Practical Recipes which gives the composition of clear and pigmented cellulose acetate and nitro-cellulose based dopes as follows:

Colour/Name	Code	Pigments
Transparent	V.114	Nil
Protective Covering	P.C.10	Yellow ochre and carbon black
Nivo	—	Yellow ochre, lithopone and ultramarine blue
Matt black	V.B1.4	Carbon black
Protective Covering	P.C.12	Red iron oxide and carbon black
Aluminium Covering	V.84	Aluminium powder
Red identification	V.R.3	Lithol red
White identification	V.W.3	Zinc oxide
Blue identification	V.B.2	Ultramarine blue and zinc oxide
Red* identification	V.R.N.5	Red iron oxide
Blue* identification	V.N.B.6	Ultramarine blue, zinc oxide and carbon black*

\*Identification colours for night flying machines.

J. S. Stringer, Diddcot, Berks.  
Bruce Robertson writes: Mr Stringer's explanation of 'A' in APD/APDT is agreed. The coded colours in the manufacturer's recipe are from the standard set in the official standard specification 2D.103 dated March 1922 titled 'Air Ministry Nitro-Dope Coverings and Identification Colours'. The actual shade produced was stated to be that of the standard, then obtainable from the British Engineering Standards Association, which it should approximately match when compared in diffused daylight. Thus, in spite of rigid documentation, a variation in shade was acceptable, depending on the interpretation of 'approximately' by the AID inspector concerned.

## Wrong aircraft

ON page 547 in the August issue of AIRFIX magazine, you captioned a photograph as being of an American HP 0/400. It is, in fact, an HP V/1500, a fact made obvious by the propellers.

N. S. Beeson, Cowbridge, Glam.

Thanks also to other readers who pointed this out—Editor.

## Propeller Tip Markings

READERS may be interested to know that, after more than 30 years, the RAF is giving up the standard yellow propeller tip marking. On instructions recently issued by the Ministry of Defence, the yellow is to be replaced by three bands of Post Office Red, White, and Post Office Red.

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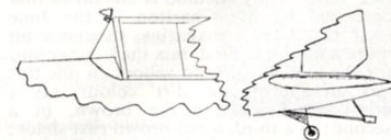
Letters to the Editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters columns. Please note that any letters anticipating a reply MUST be accompanied by a SAE or stamp.

The exact size of the bands will depend on the type of aircraft. For the Auster, Bassett, Chipmunk and Devon, the widths (reading in from the tip) in inches will be 2½, 4, 2; for larger aircraft, such as the Andover, Argosy and Dakota (yes—we still have one!) the widths will be 4, 4, 3; and for the largest aircraft, such as the Hercules and Shackleton, the corresponding figures will be 4, 6, 4.

On aircraft where the propellers are forward of the cockpit, this new marking will only be applied to the front of the blade; the rear tip face will continue to be painted yellow. Helicopter rotor tips will also remain yellow.

It may be some time before all the aircraft in service carry this new scheme, but one Cranwell Varsity (WJ918: NF) has already had the treatment, but incorrectly applied as white/red/white! Modellers who want to try this up to date marking on the new Airfix Chipmunk or Hercules will probably find that the easiest way of making a neat job is to paint the entire tip in glossy red, and then apply a sliver of white transfer, or to rub on some Blick Dryprint white strip. Though not exactly correct, ¼ inch strip looks about right in 1:72 scale.

My own model of the Chipmunk will of course, be finished in Cranwell colours, with a pale blue spinner and a one foot pale blue rear fuselage band, outlined in dark blue. Possible serial numbers include



WB654, which is fitted for glider towing, with a rear view mirror above the windscreen and a cable attachment point under the tail fairing, as shown in the sketches.

Wing Cmdr B. Huxley, CFI, RAF College, Cranwell.

## White walls

WHILE making the Airfix Porche Carrera 6 model car, I came across this method of painting white walls on tyres. It is not a sensational method but one that is easily available to most people. I used a pair of school compasses of the type that takes a pencil. It works equally as well with a paint brush in it. It takes a bit of

practising to adjust to using a paint brush instead but once mastered it provides quite a neat symmetrical circle. This must be done before adding the hub caps as the mark made by the compass point would spoil the effects. The point must be well anchored as a slip is easy. Well-painted white walled tyres add greatly to the appearance of a car.

M. Hurst, Stevanage, Herts

## Useful tip

IN THE past issues of AIRFIX magazine, readers have indicated that they have been experiencing difficulty in removing 'Chrome' from kit components. They may find that the following method is most satisfactory.

The 'Plating' on the area to be cemented or painted can be removed easily with a Type eraser. This does not damage the surface and leaves a clean surface ready for the next step in construction. This method is most suitable when removing plating from the small components, which usually disintegrate when using any other method.

For some reason, this effect is only achieved with the Type eraser, but if it is only required to 'Tone down' bright plated parts, a Pencil eraser can be used without removing the plated surface.

G. J. Griffiths, Brmingham.

## Preserved Battle

AFTER reading Michael Bowyer's fine article on the Fairey Battle in your September issue, I thought that readers might be interested in hearing about an unusual Battle in the Canadian National Aeronautical Collection at Rockliffe CFB, near Ottawa.

Battle s/r R7384 was built as a gunnery trainer. Its pilot is housed in a cockpit like the forward cockpit of a Battle (T). Behind the cockpit, approximately where the second man would sit in a Battle (T), is a turret rather resembling the mid-upper turret of a Blenheim.

Currently, R7384 is painted a high gloss yellow, with black wing walk stripes and anti-glare panel. The serial number is forward of the tail plane, black, and omits the 'R'. A broad white stripe, slanting back from top to bottom is around the fuselage, bearing the number '35' in large 'clipped corner' numerals. The flash is square with a thin white line. The six roundels are the standard red-white-blue type, and in the usual places. The propeller is black with yellow tips.

Eugene Souberman, Bronx, New York, USA.

## Beaufighter points

IN THE January issue reader A. Dods-worth of Hull sent in two photographs of his conversion of the Airfix Beaufighter to a Mk 1F, T4638: NG-F, of 204 Sqn. I am afraid that there are several inaccuracies on his model which perhaps for the sake of authenticity he would like to rectify. First, the fuselage roundels on the actual aircraft were in fact slightly smaller than the codes NG-F, in contradiction to the

Continued on next page



## Letters—continued

model's roundels which are slightly larger than the codes. Secondly, by looking at a photograph of the actual aircraft with all her A.I. radar, I saw that she had no radio-mast on top of her fuselage, although she did have a long horizontal aerial on the starboard underside of her fuselage. Apart from these faults, Mr Dodsworth's model is a fine representation of the original.

Ian Kuah, Singapore 3.

## Brummer Stopping

I AGREE entirely with Mr Whiting's views on Brummer Stopper but it must be the Waterproof grade as the ordinary Brummer is no better than other body putty.

The waterproof stuff is absolutely marvellous from the plastic modeller's angle as it adheres well, dries in a flash, doesn't shrink, cuts easily, and sandpapers finely.

G. Stevens, Carlswood, Surrey.

## Eagle ships

I WAS most surprised to read Mr J. C. Crane's comments on the non-production of certain 1:1200 scale Eagle Ship kits. Unless I have misread his letter he states that among several ships not produced was the *King George V*, and yet I am the proud possessor of one of these ships.

During the time that Eagle manufactured their range I had the pleasure of building most of them, and purchased my last few from a shop that was clearing out old stock about a year ago. I agree entirely with Mr Crane's comments that Airfix would have a ready market if they produced a range of frigates, minesweepers and submarines in 1:600 scale.

Even more necessary, and this is not just my own view, is a larger range of merchant ships. Perhaps a line of the earlier ones, and possibly to a scale of 1:1200 would be well received. If these could be produced to Airfix's usual high standard of moulding and at the usual competitive price I am sure there would be queues form the moment they were placed on the counters.

K. J. Henshaw, Woodthorpe, Notts.

## RAAF Mirage

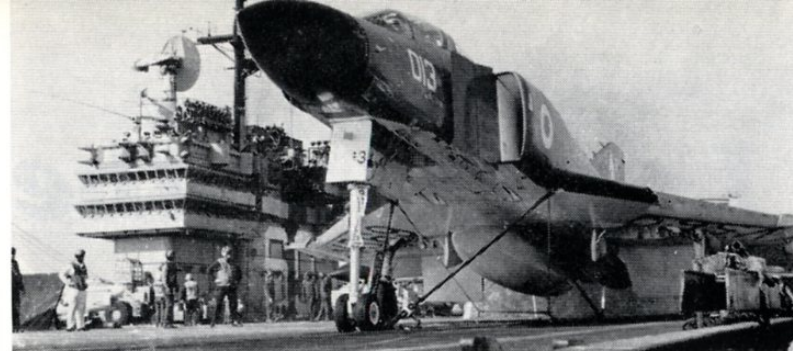
READERS may like to hear of another colour scheme for the Australian Mirage 1110 of 75 Sqn RAAF. Some of their aircraft are now camouflaged grey/green in matt finish, although the leading edges of the wings, fin and air intakes are gloss. The aircraft carry 75's black and white tail markings as per Richard Gardner's drawings.

An example is A3-67, with serial in white in the usual position and with 67 repeated on the nosewheel door. The Sidewinders on this machine are black with white rear fins and nose, and red forward fins.

The article on Hunters also requires comment as 20 Sqn have changed their markings since your drawings were done. The aircraft serial is now applied direct and not on a light grey panel. The aircraft identity letter is one foot high in white on the fin, above and behind the fin stripes and on the red nosewheel door, eg, 'A', XE 652, and 'J', XE 582.

And now a personal plea. When is Airfix going to produce a model of the famous Canberra, which has been in service for many years yet has been sadly neglected by kit manufacturers?

Flying Officer G. A. Brady, RAF, Tengah.



Above: Phantom FGA 1 of 892 Sqn FAA about to be launched from the steam catapult of USS Saratoga during a six day exercise period in October. XV569:013 was one of four FAA Phantoms embarked. Below: D. J. Hartnell sent this view of 277:R, a Firefly I of 837 Sqn at Trincomalee in 1946, complete with C type roundels. Same aircraft was shown in 1945 marking style on page 64 of the October issue.



## MODEL SHOW

READERS are invited to visit a large model exhibition at Farnborough Town Hall, Hants, on Saturday November 29 and Sunday November 30, 1969, opening each day at 9.30 a.m. and closing at 9.00 p.m. on Saturday and 6.00 p.m. on Sunday. The organizers are the Railway Enthusiasts' Club and though the emphasis will be on railway models, other aspects of modelling will be well represented also. AIRFIX magazine contributors Norman Simmons and Richard Gardner will each have exhibits on view and will be delighted to see anyone with queries, etc. Norman Simmons will be featuring all his recent railway conversions and Richard Gardner, with John Turner and Peter Lockhart, will be presenting a part of their large 1:72 scale model aircraft collection which will include some recent conversions from the magazine.

## Painting AFV models

MORE on the subject of finishing AFV models. My method is similar to that described by Mr Charlton in the June issue of AIRFIX magazine, though a bit more ambitious. First, mix the basic colour for the model, eg, sand yellow, in one tin; mix an appropriate 'dirt' colour, say a grimy black or vandyke brown, in a second; in a third, a red-brown rust shade; and in a fourth, a dark earth mud colour.

Second, paint a small area of the vehicle in the basic colour. Then where rust or dirt stains occur, apply a little rust or dirt colour, over the still wet basic colour coat, and blend in. Always brush vertically, ie, in the direction water, oil, etc, runs—this

gives a good appearance of weathering. Rinse your brush in turps then repeat the process on the next part of the model.

Third, apply earth or mud colour on hull bottom, lower nose and lower sides; on vertical surfaces brushing vertically again.

Fourth, tracks are painted all over rust colour first, then detail is picked out with a mid-grey shade; next earth is dabbed on and finally the track shoes which touch the ground are painted a light grey with just a little silver in it to metalise it.

Lastly, detail finishing. Paint engine grilles matt black before applying the basic colour coat, then the framing of the grilles during application; similarly pick out hatches by flowing matt black into the grooves before the basic coating. Hatches, raised engine covers and ventilators may be picked out by painting the surrounding surfaces with a darker shade of the basic colour, then the hatch in the normal colour; likewise vertical surfaces may be distinguished from horizontal by darkening the vertical one, especially as stains and weathering often produce this effect on the real vehicle.

Though these techniques may seem rather lengthy and involved, they are well worth applying when finishing AFV models. I recently used all of the tricks described here on an OO scale StuG III Assault Gun and believe me the result is strikingly effective.

Clive Lovell, Woollahra, NSW, Australia.

## Dayglo source

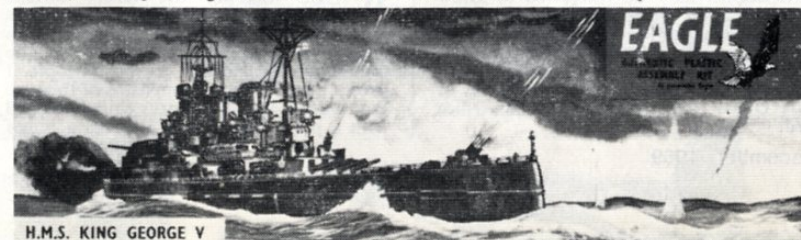
Many people have found it difficult to obtain realistic fluorescent panels on their aircraft models, although the recent advent of sheets of fluorescent transfers should help for two dimensional surfaces.

I have found that 'Kalium' paint, which is normally used for home made fishing floats, gives a most realistic finish. It is sold in both red and orange, as well as other fluorescent colours. If applied directly to a plastic surface, it makes the plastic go crinkly, but this is no problem, as the paint should be applied over a white surface.

I have found that an undercoat of white Humbrol is perfectly satisfactory.

R. Cooper, Lusaka, Zambia.

Below: Many readers wrote in to dispute Mr J. C. Crane's statement on non-appearance of the Eagle King George V. C. A. Jackson even sent us this boxlid to prove its existence.



H.M.S. KING GEORGE V

## New Books—from page 159

dropped over Britain by the Luftwaffe from Hitler appealing (for the last time) for reason, five sheets of concise useful material about the Battle, reproduction of some of the wartime silhouettes officially prepared and none too accurate to say the least, a chart of the radar and early warning system and a very large map of the British Isles. Accompanying the latter are symbols which you can cut out to represent German units, British squadrons and the balloon barrage. Spread on the table if it's big enough, on the floor or fixed to the wall, you can depict any stage of the Battle and the whole comes vividly alive. The Jackdaw series is intended for school use, but this on the Battle is a very useful one to acquire. Don't be put off by the cover which shows pilots of 601 Sqn racing to their aircraft long after the Battle had ended.

## Armoured Cars

AMERICAN ARMoured CARS, 1940-45, by Chris Ellis and Peter Chamberlain. Published by Almarks Publishing Co, 104-106 Watling Avenue, Edware, Middx. Price 12s 6d, postage extra.

THIS is the first of a new series of books from Almarks, hitherto mainly a transfer producer, which will deal with various military and other subjects. Aimed at modellers as well as armour enthusiasts, this book contains several pages of 1:48 scale drawings of the main US armoured car types with 1:76 scale reductions of side views as well. There is a lengthy detailed text and more than 40 big pictures, many of them hitherto unpublished. The book recounts the development of armoured cars in America during World War 2 as

## Military Modelling—from page 184

engine compartment. I believe that the purpose of these was to hold pig iron weights to give added ballast for towing and lifting, though I have seen pictures of vehicles without such fittings. The heading picture shows the arrangement.

## AUSTRALIAN GRANT ARV

The Australians produced their own version of the Grant ARV for use with the Grants and Lees they inherited from the British. These were simply standard vehicles with guns removed and added winches. There were several detail variations in the few vehicles altered, depending on the model type. My conversion shows the typical finished appearance, however. Make up the chassis and hull in accordance with the kit instructions, again omitting the 75 mm gun. Use the Lee turret fitted with the Grant hatch and cement it facing the rear. Fill in the small lower cut out with a piece of plastic card and then cut a small flap to cover the mantlet aperture. This can be cemented either opened or closed.

These vehicles had a fabricated cupola, roughly made up and sited above the old 75 mm gun barbette. I used a Lee cupola here,

## War Emergency Destroyers—from page 185

With a sprig of thin sprue make a series of tiny white dots vertically upwards from the intersection of the bow and the keel on each side to represent the draught marks. Terminate the marks halfway up the ship's side and similarly mark the stern.

Paint the dan buoys white, and then add tiny dots of red or green as appropriate to their side, again using a sprig of sprue. At the same time, put a few red dots on the superstructure bulkheads to represent the flooding valves and fire-hose racks.

As an alternative deck colour scheme, both fo'c'sle and quarter-deck can be grey, with the raised plating forward of the cableholders picked out in matt black.

All ships should at least wear a White Ensign, if nothing else, and the different positions from which it was flown at sea are detailed in the Equipment Table. It will be seen from this that some ships had an ensign gaff on a stump, some a gaff on the funnel, while others had no gaff at all, and flew their ensign from a very small staff on the midship gundeck. All three locations were the sea positions, of course; in harbour, the ensign was flown from its staff on the quarter deck.

Reader E. W. Elwick points out that HMS *Valentine* included in the class list last month never commissioned under that name but was transferred to Canada as *Algoquin* before completion. In the case of the 27th Destroyer Flotilla, at least, the flag superior changed to 'D' in 1945 as shown in Mr Elwick's pictures of *Wager* which illustrate this article.

December, 1969

well as describing all production types in detail. There are very complete specifications in tabular form, and stowage diagrams, etc. The stiff covers are colour printed inside and out and feature colour multi-view drawings of five different vehicles with all marking details. All the drawings, colour and line, are by Kenneth M. Jones.

## In brief

FROM Bellona we've had an interesting small booklet *The Development of the Motor Car* (Bellona Publications, 10s 6d) which covers the years up to 1910 with about 150 drawings of cars, concentrating on the lesser known and more unusual types. No text, just linking captions, but motor car fans should find it worth having. New edition of *World's Air Fleets*, by David W. Wragg (Jan Allan, 25s) follows the well-known format of this publisher's medium size reference books, with histories, fleet lists, registrations, facts, livery details, etc, of all the major airlines. There are numerous additions to the book since the first edition and it has been fully revised. Many readers will already be familiar with a pleasantly produced Dutch series of books on military subjects published by Alkenrecks. UK Agent for these is Graham K. Scott, 2 The Broadway, Friern Barnet Road, London N11. Three new releases cover the Dutch infantry, cavalry (armour), and engineer corps respectively with the general title *Onze Koninklijke Landmacht*, subtitled as above. Each of these well-produced pocket books is profusely illustrated and covers the equipment, organisation, arms, uniforms, badges, etc, of the arm concerned. These are just about the only reference books available on current Dutch equipment, and though they have a Dutch text it is not difficult to follow (Graham K. Scott, 7s 6d each, postage 1s). We found the engineer corps volume the most interesting, particularly as it shows the Dutch Centurion Bridgelay which differs from the British version in having the US scissors bridge. New releases in the Instant Picture Book series are *Sea Travel*, and *Fashion Through the Ages* (Patterson-Blick, 3s 11d each), intended mainly for youngsters but nonetheless containing much information simply presented. Model soldier collectors will find useful basic information on costume development in the latter title. The mass of instant 'rub on' transfer figures in this book are to about 20 mm size. Recent releases in the AFV Profile series include *The Medium Tanks Mk A-D*, *The Crusader*, *Armoured Cars 1914-18*, *Light Tanks Mk I-IV*, and *The Panther* (Profile Publications, 5s each). All are to the usual format with colour drawings on the centrespread, lengthy detailed texts, specifications, and masses of rare pictures.

filed away on the inside to fit and with the top detail filed down. Plastic putty was used to build up the front to rounded shape.

Stowage boxes are fitted on this model as for the T2 TRV described last month, except that they come level with the main superstructure instead of being higher. Make up these boxes face by face from plastic card. All that now remains to be added is the recovery gear. The winch wires were led over a roller rigged on vertical arms in line with the stowage box ends. Use a cocktail stick or Slaters rod for the roller, with Microstrip for the arms. There is a cross girder just below the roller and close up to it.

An earth spade is made up as shown in the drawing, again using plastic card and Microstrip in its fabrication. This was pivoted on the inside of the idler axles at the hull rear. A stay on each upright held the spade against the hull rear in the normal travelling position. A rear tow hook on the lower hull rear is needed and further detailing can include a front stowage box, timber baulks, spare wheels, tow ropes, tarpaulin, snatch block etc. Some vehicles had a low plate across the top of the hull rear to prevent loose gear falling off the back.



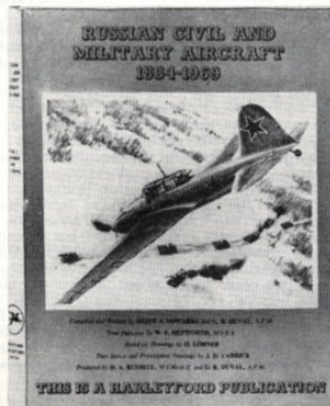
Above: HMS *Wager* in the Pacific in 1945 with a single Bofors mount and twin Oerlikon mounts abaft the funnel. The Hazemeyer Bofors mount is further aft with its radar aerial just visible above it.

Left: Another view of *Wager* this time showing the port side twin Oerlikon complete with its gyro gunsight, the Hazemeyer Bofors, and the 10 ft dinghy lashed under the Carley float stowage (E. W. Elwick).



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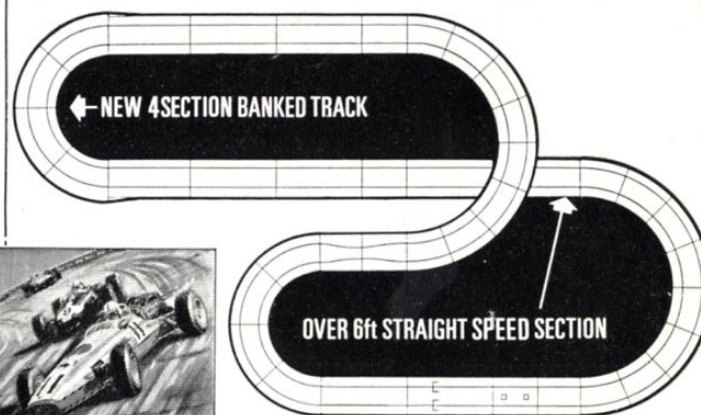
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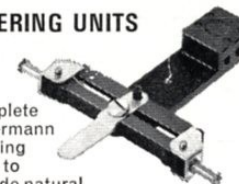
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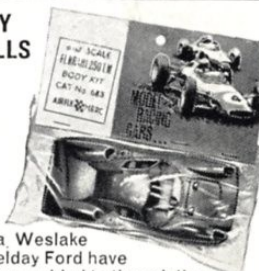
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